

IMMEDIACY AS AN INDICATOR
OF CHILDREN'S ATTITUDES TOWARD SCHOOL

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CHAPTER I

INTRODUCTION

Background

Attitudes toward school might be thought of as existing at two levels, the general and the specific. In either case, they are dispositions to act or react in either a positive or negative way. At the general level, for example, the public holds some attitude toward its schools as institutions, and the polarity of these attitudes can be inferred from reactions at the polls to bond issues. The attitude of the general public can be inferred from surveys as well. For example, it is quite a simple matter to learn a community's attitude, how it will react, to a teachers' strike. In either case, it seems logical that knowledge of these attitudes is important to decision makers in education.

In contrast to general attitudes toward school, which are held by a majority or significant portions of the public, specific attitudes toward school are those that are held by individuals or groups of individuals. For example, individual students have attitudes toward all kinds of school objects--teachers, friends, buildings, particular rooms, subjects, and the like--and the actions stemming from these attitudes can assume forms ranging from an eagerness to proceed with some study to

an attack upon a teacher in a classroom. Furthermore, specific attitudes toward school are responsible for small group actions ranging from the viciously antisocial to the altruistic.

The term attitude in these cases becomes confused with value, interest, motivation, morale, and many others, but the purpose of this study is not to contain the term attitude. On the contrary, the term is probably more useful in this general sense. What this discussion will accomplish, it is hoped, is the establishment of the importance of attitude study in general and in particular the importance of studying the attitudes of young children.

Bloom estimated that half of the intellectual development of a child will have at maturity occurs by the time he is four years old and that by the time the child is six years old he has developed two-thirds of the capacity that he will have when he is seventeen.¹ If a child's mental processes are fairly well developed by the time he enters school and if attitudes are learned, there is reason to believe that the child is very early developing attitudes toward various objects in his environment. One needs to read very little of Freud to find similar ideas.

It therefore seems only reasonable that if educators desire to develop positive attitudes toward school--and it is the first assumption in this study that this is so--then there should be evidence to that effect. If it is hoped that a child will ultimately have attitudes

¹Benjamin S. Bloom, Stability and Change in Human Characteristics (New York: Wiley, 1964).

positive enough to propel him to independent study, to give him what the Educational Policies Commission calls the "inquiring spirit"² then there should be evidence very early that these positive attitudes are indeed being developed.

The evidence so far collected, however, fails to establish that public schools have been successful in achieving positive attitudes toward school. Indeed, the evidence seems to indicate the contrary. Students seem to like school less and less as they progress through the system.^{3,4,5} Neale and Proshek wrote:

Evaluations of a variety of school-related phrases were increasingly negative as grade in school increased. The same was true for an evaluation of self. The trends were not a function of school or sex.⁶

and

If so, it suggests the schools are falling down on one of the most important proximate objectives of education, the cultivation of a positive attitude toward schooling.⁷

² Educational Policies Commission, The Central Purpose of American Education (Washington, D.C.: National Education Association, 1961), p. 19.

³ Sheila Mitchell and Michael Shepherd, "The Child Who Dislikes Going to School," British Journal of Educational Psychology, 37 (February, 1967), 32-40.

⁴ John W. Wick and Robert E. Yager, "Some Aspects of the Students' Attitudes in Science Courses," School Science and Mathematics, 66 (March, 1966), 269-273.

⁵ Daniel C. Neale and John M. Proshek, "School Related Attitudes of Culturally Disadvantaged Elementary School Children," Journal of Educational Psychology, 56 (1967), 238-244.

⁶ Ibid., p. 248. ⁷ Ibid.

Clifford F. S. Bebell recently wrote:

If there is to be any conflict between the acquisition of knowledge and the development of attitudes and habits for the effective use of knowledge, the latter must take precedence over the former.⁸

The schools of today, however, seem to instill negative attitudes. It is paradoxical that though independent study is one of the goals of American education--the ideal situation, according to Gardner⁹--the schools often foster attitudes which impede the attainment of the goal.

Particularly affected by the negative attitude producing potential of the public schools are the children of the lower class, call them culturally or educationally deprived or whatever. These are the children who drop out of school in droves, who if they complete their schooling do so with inadequate training to compete in the modern economic system, and who cause all kinds of anguish to teachers, administrators, and society in general. These are the children who are now waiting eagerly to come to school to learn. They are the children who will go to kindergarten and then to first grade, but they are destined to become a part of what Michael Harrington calls "the other America"¹⁰ unless some changes are made in the system of educating them.

⁸ Clifford F. S. Bebell, "The Educational Program: Part One," Emerging Designs for Education, eds. Morphet and Jesser (New York: Citation Press, 1968), p. 11.

⁹ John W. Gardner, Self-Renewal: The Individual and the Innovative Society (New York: Harper and Row, 1964).

¹⁰ Michael Harrington, The Other America: Poverty in the United States (Baltimore: Penguin, 1963).

There are some concerted efforts being made to compensate for various kinds of impoverishment through such programs as Headstart, Followthrough, and others, but for the most part the gains are being measured in terms of knowledge and skills. There is little or no evidence of gains in positive school attitudes which are essential in the development of the "inquiring spirit."¹¹

There are many reasons why these attitudes are not being measured. Young children are generally unable to read or write, but children who are disadvantaged have the additional handicap of not speaking standard English.¹² For all practical purposes, then, any instrument designed to measure objectively the attitudes of these children toward school will need to employ nonverbal responses of some kind.

Need for the Study

The need for this study is based upon the assumption that one of the goals of education is the development of positive attitudes toward school. If this assumption is correct, then instruments are needed to assist in the evaluation of progress toward this goal. In some instances, there are already instruments that appear adequate. There are a number of scales, but these are useful only for older

¹¹Educational Policies Commission, p. 19.

¹²Basil Bernstein, "Social Class and Linguistic Development: A Theory of Social Learning," Education, Economy, and Society, eds. Halsey, Floud and Anderson (New York: Free Press of Glencoe, 1961), pp. 288-314.

children. There are no instruments to assess objectively the attitudes of young children toward school, though attempts are being made to develop them. For example, researchers are trying to relate attitudes to such variables as the amount of heat radiated by the body and the diameter of the pupil of the eye.^{13,14}

The information that such instruments could provide would be most helpful to decision makers in education. A parallel situation might be useful to make this point: One of the purposes of the various science curriculum projects has been the encouraging of youngsters to select science as a career; but in spite of the millions of dollars being spent, investigators¹⁵ found that interest in science had not increased. Another investigator did an experiment with dogs, subjecting one to a deprived environment while lavishing another with attention. Contrary to expectation, the dog from the meager environment was more friendly than the other.¹⁶

These examples are not cited to discredit present attempts to develop positive attitudes in children. What is important is that these attitudes need to be measured. Decision makers need to know what their programs are accomplishing with attitudes, particularly if they are succeeding only in developing negative attitudes.

¹³Stuart R. Johnson, "A Measure of Students' Attitudes Toward New Curricula," Claremont Reading Conference Yearbook, 32 (1968), 213-217.

¹⁴E. H. Hess, "Attitudes and Pupil Size," Scientific American, 212 (April, 1965), 46-54.

¹⁵Dan C. Wynn and Joseph C. Bledsoe, "Factors Related to Gain and Loss of Scientific Interest During High School," Science Education, 51 (February, 1967), 67-74.

¹⁶D. O. Hebb, A Textbook of Psychology (Philadelphia: Saunders, 1958).

Sidney Belt put it this way:

Attitude formation has often been cited as one of the primary objectives of the American school. Therefore any technique which promises a valid measurement of attitude merits investigation. If that technique also promises to provide teachers and other educators with a greater amount of information useful for curriculum improvement than widely used existing techniques; the project is doubly justified.¹⁷

Statement of the Problem

If the assumptions basic to the study are correct--that attitude development in children is one of the goals of American education, that information about attitudes is important to decision makers in education, and that instruments are needed to provide this information--then many approaches to the development of such an instrument should be explored. The problem of this study, then, was to develop and evaluate an instrument employing immediacy as an indicator of the strength and direction of children's attitudes toward school.

Questions

1. Can the linguistic construct of immediacy be modified from its present form to pictorial and verbal cues to which young children will respond in such a manner so as to provide information from which their group's attitudes toward school can be inferred?
2. Are the reliability and validity estimates of this instrument such that it deserves further development and use?

¹⁷ Sidney Leon Belt, Measuring Attitudes of High School Pupils Toward Science and Scientists (Dissertation, Rutgers, June, 1959), p. 9.

Design and Methodology

One approach that has not been attempted in measuring children's attitudes toward school involves Mehrabian's construct of immediacy,¹⁸ which is related to psychological distance and approach-avoidance constructs.¹⁹ The idea is that the closer the object is to the subject, the more positive the subject's attitude. Applications of such constructs are common in projective tests. Immediacy is different from the others in that it is a linguistic concept. Mehrabian has shown that language varies in immediacy according to attitude expressed--the more immediate the language, the more positive the attitude. Mehrabian's work with immediacy, however, has not included application of the construct in the assessing of children's attitudes, though he encouraged such a study in a personal communication.

The writer proposed to translate Mehrabian's immediacy construct into pictorial and verbal cues. The assumption was that a child would select the more immediate option if his attitude toward the subject of the option were positive, that he would select the less immediate option if his attitude were negative. The responses of the children were to be

¹⁸ Albert Mehrabian, "The Effect of Context on Judgements of Speaker Attitude," Journal of Personality, 36(1) (March, 1968), 21-32.

¹⁹ Horace B. English and Ava Champney English, A Comprehensive Dictionary of Psychological and Psychoanalytical Terms (New York: Longmans, Green, 1959), pp. 39, 159.

nonverbal, and the format was to be the disguised-structured test described by Campbell²⁰ and others.^{21,22}

Plan

The development and evaluation of the instrument was planned to take place in three stages. First, a pilot study was done to evaluate a number of items. A prototype instrument, using pictorial and verbal immediacy cues, was administered to two first-grade classes. Each test item consisted of a pair of pictures, which were cued verbally by the tester. The more immediate picture was cued with the more immediate verbal expression, and the less immediate picture was cued with the less immediate verbal expression. The child identified his choice by pointing. The purpose of the pilot study was to decide whether or not the approach was worthy of continuing. The decision to continue was based upon estimates of validity and reliability and approval by the writer's supervisory committee.

The second stage of the study was the continuation of the pilot study in the development and evaluation of the instrument. A number of approaches were attempted in local public schools. These approaches were based upon Mehrabian's nine categories of immediacy and non-immediacy and are described in Chapter III. The development and

²⁰ Donald T. Campbell, "The Indirect Assessment of Social Attitudes," Readings in Attitude Theory and Measurement, ed. Fishbein (New York: Wiley, 1967), pp. 163-179.

²¹ Anne Anastasi, Psychological Testing: Third Edition (New York: Macmillan, 1968).

²² Gene F. Summers, "Indirect Measurement of Attitude," Teachers College Journal, 37 (March, 1966), 198-202.

evaluation of the instrument took place at various grade levels under varied conditions. Data relating to test reliability and validity were collected and evaluated, and test items were analyzed and evaluated. The products of the second stage were a test, data on the reliability and validity of the test which were collected during development, and written procedures for the administration of the test and interpretation of the test scores.

The third stage of the study was the evaluation of the instrument on a large scale. During this stage, data were collected to substantiate previous estimates of reliability and validity.

Reliability

Data on the reliability of the instrument were gathered while the instrument was being developed. A final measure of the reliability was taken during the large-scale testing. At this time three commonly accepted (by the National Committee on Test Standards²³) means of establishing reliability were employed: (1) split-half (internal consistency), (2) test-retest (consistency over time), and (3) comparability of forms. Shaw and Wright stated that, "Ideally, all three forms of reliability estimates should be determined for each scale."²⁴

²³ National Committee on Test Standards, "Standards for Reporting and Evaluating Test Reliability," Educational and Psychological Measurement: Contributions to Theory and Practice, eds. Payne and McMorris (Massachusetts: Blaisdell, 1967).

²⁴ Marvin E. Shaw and Jack M. Wright, Scales for the Measurement of Attitudes (New York: McGraw-Hill, 1967), p. 562.

Validity

Estimates of the validity of the instrument were based upon a number of procedures: First, teachers and school administrators from the schools in which the immediacy instrument was developed were employed in the initial rating of the items. They were asked to take the test and to decide which of the alternatives represented the more positive attitude toward the school object. Some of these judges were trained; that is, they were taught how to discriminate the more immediate from the less immediate drawings. Some were not trained; that is, they were asked to make judgements based on what they thought or felt. This was a form of content or "face" validity. Second, comparisons were made with accepted indicators of children's attitudes toward school (criterion-related validity). Third, the instrument scores were correlated with estimates of children's attitudes by teachers who were recognized by experts as being able to produce valid estimates (criterion-related validity). Fourth, and perhaps most important, the writer attempted to establish construct validity. The National Committee on Test Standards described the three steps of the procedure:

First, the investigator inquires from his theory what hypotheses may he make regarding the behavior of persons with high and low scores? Second, he gathers data to test these hypotheses. Third, in the light of the evidence he makes an inference as to whether the theory is adequate to explain the data collected.²⁵

Of the four kinds of validity described by the American Psychological Association Committee,²⁶ data were collected on all except predictive

²⁵National Committee on Test Standards, "Three Characteristics of Validity," pp. 78-79.

²⁶Shaw and Wright, p. 563.

validity, which could possibly have been developed using absenteeism or drop-outs. With young children, however, drop-out data would be meaningless. Mitchell and Shepherd found that attendance of young children, in contrast with older children, was not affected by attitudes toward school. For these reasons, no attempt was made to establish predictive validity.

Definitions

Attitude: An attitude is a disposition both to evaluate objects and to react emotionally to them; but in each case the object exists in a situation. The term is used in this study to describe the emotional disposition of the young child toward the school.

Immediacy: In this study the term "immediacy" means the degree of directness and intensity of interaction as represented in pictorial and verbal cues. Mehrabian's definition of immediacy of speech is "the degree of directness and intensity of interaction between a speaker and the object he speaks about--as given in the speech itself."²⁷ Mehrabian then broke immediacy down to nine categories: Distance, Time, Order of Occurrence, Duration, Activity-Passivity, Mutuality-Unilaterality, Probability, Communicator Participation₁ and Communicator Participation₂.²⁸ These categories and their use in the study are explained in Chapters II and III.

²⁷ Mehrabian, p. 22.

²⁸ Ibid., p. 25.

Disguised-Structured Test: A disguised-structured attitude test is an instrument that gives an objective measure of attitude toward school, while the purpose of the instrument remains hidden from the child being examined. The test is described by Anastasi as having four features: (1) it is task oriented, (2) its purpose is disguised, (3) it is structured, and (4) it seems to have right answers.²⁹

Limitations

Before this study was begun, a number of limitations were apparent: (1) the instrument that would be developed and evaluated would be experimental, and data on reliability and validity should not be generalized beyond the situation in which the data were collected; (2) the instrument would be developed as an indicator of group attitude and should not be used as a clinical tool or an indicator of an individual's attitude; and (3) the instrument would be developed as an indicator of attitude from a nonverbal response. Its use should be limited to situations where there are language limitations.

²⁹Anastasi, p. 526.

CHAPTER II

SURVEY OF RELATED LITERATURE AND RESEARCH

Introduction

Chapter II is an overview of literature rather than a review, since there has been a great amount written about attitudes. The organization of the chapter includes general statements from the literature, a discussion of pertinent needs and shortcomings, a discussion of current trends and research findings, an explanation of the indirect method employed in this study, a discussion of the studies of the attitudes of young children, a discussion of the studies of Mehrabian whose construct of immediacy is basic to this study, and a summary.

General Statements from the Literature

It would seem certain that the study of attitudes could be easily traced back to the end of the nineteenth century, and no doubt the study goes further back than that. There is little point, however, in tracing this history because at best an attitude has been and continues to be an ambiguous concept.

Rokeach wrote that "Some predispositions are momentary, in which case they are not called attitudes"; other terms, such as "set"

or Einstellung, are used.¹ Rokeach went on to observe that "the concept of attitudes is typically reserved for more enduring, persistent organizations of predispositions." He explained that attitudes exist toward objects but that these attitudes also exist in a situation.² An attitude for Rokeach was a set of interrelated predispositions to respond.

Cook and Selltiz wrote that there are "public" attitudes that are not the same as those dispositions to act in a certain way:

In this view, an attitude cannot be measured directly, but must always be inferred from behavior--whether the behavior be language in which the individual reports his feelings about the attitude object, performance of a task involving material related to the object (e.g., recall of statements which take a position with respect to the object), or actions toward a representative of the object-class (e.g., avoidance of such an individual).³

Krech and Crutchfield defined an attitude as "an enduring organization of perceptual, motivational, emotional, and adaptive processes centering on some object in the person's world."⁴

A complete picture of man's attitudes toward the objects of his social world can yield highly reliable predictions about his behavior in many situations. It is for this reason that some

¹ Milton Rokeach, Beliefs, Attitudes, and Values: A Theory of Organization and Change (San Francisco: Jossey-Bass, 1968), p. 112.

² Ibid., p. 118.

³ Stuart W. Cook and Claire Selltiz, "A Multiple-Indicator Approach to Attitude Measurement," Readings in Attitude Theory and Measurement, ed. Fishbein (New York: Wiley, 1967), p. 220.

⁴ David Krech and Richard S. Crutchfield, Elements of Psychology (New York: Knopf, 1958), p. 692.

psychologists regard the study of attitudes--their nature, function, development and change, and their measurement--as the central problem of social psychology.⁵

Allport wrote that an attitude is "when the disposition is bound to an object of value, that is to say, when it is aroused by a well-defined class of stimuli, and when the individual feels toward these stimuli a definite attraction or repulsion."⁶ Thurstone⁷ wrote that an opinion symbolizes an attitude but that there was some controversy over the uncertainty of using an opinion as an index of attitude. Thurstone also developed several measuring processes which are still in use today. Capel recently did a study on one of these processes, comparing the results of an attitude test (equal appearing intervals) taken in the mid-thirties by a group of women with the results of the same test in the mid-sixties. He found that the attitudes were remarkably stable and concluded that, "whatever it was that attitude scales measured 30 years ago, they still do."⁸

Fishbein differentiated attitude from belief by suggesting that belief "was defined as the probability dimension of a concept . . ."

⁵ Ibid., p. 672.

⁶ Gordon W. Allport, Personality, A Psychological Interpretation (New York: Holt, 1937), p. 295.

⁷ Louis L. Thurstone and E. J. Chave, The Measurement of Attitude; A Psychophysical Method and Some Experiments with A Scale for Measuring Attitude Toward the Church (Chicago: The University of Chicago Press, 1929).

⁸ W. C. Capel, "Continuities and Discontinuities in Attitudes of the Same Persons Measured Through Time," The Journal of Social Psychology, 73 (October, 1967), p. 135.

and that attitude "was defined as the evaluative dimension of a concept. . . ."⁹ Sherif and Sherif wrote that an "attitude is conceived as a set of evaluative categories which the individual has formed (or learned) during his interaction with persons and objects in his social world."¹⁰

Needs and Shortcomings

One of the major controversies in the study of attitudes centers upon the focus of the research. Should opinions, stated verbal attitudes, be studied or should attitudes be inferred from a subject's behavior? Thurstone wrote that a person's actions could be a distortion of his attitudes.¹¹ Edwards¹² gave the example of the man who prefers steak but buys hamburger. Allport¹³ gave the example of starving men whose need for food did not show up on indirect tests.

⁹ Martin Fishbein and Bertram H. Raven, "The AB Scales: An Operational Definition of Belief and Attitude," Readings in Attitude Theory and Measurement, ed. Fishbein (New York: Wiley, 1967), p. 188.

¹⁰ Muzafer Sherif and Carolyn Wood Sherif, "The Own Categories Procedure in Attitude Research," Readings in Attitude Theory and Measurement, ed. Fishbein (New York: Wiley, 1967), p. 190.

¹¹ Thurstone and Chave, pp. 7-8.

¹² Allen Louis Edwards, Techniques of Attitude Scale Construction (New York: Appleton-Century-Crofts, 1957).

¹³ Gordon W. Allport, "The Trend in Motivational Theory," The Self: Explorations in Personal Growth, ed. Moustakas (New York: Harper, 1956), p. 28.

On the other hand, Cook and Selltitz pointed out the weaknesses of the direct approach:

It seems reasonable to suppose that most respondents, presented with tests in an academic setting or under the auspices of some other "respectable" organization, will assume that the responses which will place them in the most favorable light are those which represent them as well adjusted, unprejudiced, rational, open minded, and democratic. Moreover, since these are ideal norms at least in much of the American middle class, the pressures specific to the test situation are likely to coincide with inner pressures toward maintaining an image acceptable to the self as well as to others.¹⁴

Self-report measures have a number of characteristics that make them susceptible to distortion of overt responses. The purpose of the instrument is obvious to the respondent; the implications of his answers are apparent to him; he can consciously control his responses. Thus a person who wishes to give a certain picture of himself--whether in order to impress the tester favorably, to preserve his own self-image, or for some other reason--can rather easily do so. This difficulty has long been recognized, and in recent years it has been extensively investigated under the rubric of "social desirability."¹⁵

Krech and Crutchfield expressed similar ideas when they wrote:

The expression of attitudes often aids a person to achieve social and economic goals. By announcing certain attitudes he may thereby assert his conformity to the ideals and beliefs of his society--and the pressure toward conformity, as we know, is great.¹⁶

The cultivation of positive attitudes toward education, schooling, and learning is basic to many personal philosophies, and it seems to make rather good sense that these attitudinal dispositions will have a bearing upon an individual's choice of action. In this regard, it would follow then that it would be in the national interest that positive

¹⁴ Cook and Selltitz, p. 222.

¹⁵ Ibid., p. 223.

¹⁶ Krech and Crutchfield, p. 673.

student attitudes toward the school be cultivated, and attempts to accomplish this are being made with such programs as Headstart, Follow-through, and the like. Furthermore, positive student attitudes toward the study of science should be cultivated. Wynn and Bledsoe wrote:

The public has been told by presidents Eisenhower, Kennedy, and Johnson and by members of the Congress, that the survival of the nation may well depend upon its ability to compete successfully with other world powers in scientific research and development. The National Defense Education Act of 1958 cited the critical shortage of scientific manpower, and called for more and better training in the sciences and in mathematics at all educational levels. It also solicited the aid of the schools in the recruitment of youth for science careers in government and industry.¹⁷

Still, in their study of student attitudes, the investigators found that those efforts had not been successful:

The findings of this study suggest that extreme emphasis which has been placed upon science and science education during recent years has not resulted in greater interest among high school students.¹⁸

Ausubel went further in an evaluation of BSCS, a biology curriculum that was produced to help satisfy the nation's need for scientists. He wrote that an elaborate curriculum project should exceed by far what was done before, that BSCS approximates what other courses do, and that BSCS has over-corrected. Furthermore, he suggested that:

Oversophisticated detail is not only unnecessary and inappropriate for a beginning course, but also hinders learning and generates unfavorable attitudes toward the subject.¹⁹

¹⁷Dan C. Wynn and Joseph C. Bledsoe, "Factors Related to Gain and Loss of Scientific Interest During High School," Science Education, 51 (February, 1967), 67.

¹⁸Ibid., p. 74.

¹⁹David Ausubel, "An Evaluation of the BSCS Approach to High School Biology," American Biology Teacher, 28 (March, 1966), 181.

The fostering of these positive attitudes is, in the opinion of Schwirian, the legitimate business of science educators. "The Development of healthy, positive attitudes regarding the scientific enterprise and its practitioners is one of the major responsibilities of science educators at all levels."²⁰ Still, Allen²¹ found in his study of attitudes toward science that the image of scientists is not what it should be.

The methods that are being used to measure attitudes are still less than satisfactory. In 1950, Cattell et al. wrote:

It is disconcerting that psychologists have not yet found any more objective way of measuring an individual's attitudes and interests than by asking him how strong they are.²²

In 1963, Dutton and Stephens wrote:

While some progress has been made in the measurement of student development of scientific concepts and learning of critical thinking, the objective measurement of attitudes toward science as an academic discipline has been meager.²³

Modern studies of attitudes are still going back to the old methods. Johnson and Jacobson²⁴ began their 1968 attitude study of

²⁰Patricia Ann Schwirian, "On Measuring Attitudes Toward Science," Science Education, 52 (March, 1968), 172.

²¹Hugh Allen, Jr., Attitudes of Certain High School Seniors Toward Science and Scientific Careers (Dissertation, Teachers College, Columbia University, 1959).

²²R. B. Cattell, A. B. Heist et al., "The Objective Measurement of Dynamic Traits," Educational and Psychological Measurement, 10 (1950), 224.

²³Wilbur H. Dutton and Lois Stephens, "Measuring Attitudes Toward Science," School Science and Mathematics, 63 (January, 1963), 43.

²⁴Joseph C. Johnson, II, and Milton D. Jacobson, "Some Attitudinal and Comprehension Factors Operating in the Middle Grades," Educational and Psychological Measurement, 28 (Autumn, 1968), 825-832.

the middle grades by building three inventories based on Thurstone and Chave's 1929 work. Anderson and Neely's 1967 study²⁵ of attitudes toward science used a questionnaire. Blankenship's 1966 study²⁶ used an agreement-disagreement inventory. The point here is not that these methods are no longer valid, for indeed they may prove most valid, but rather that new methods are not being developed and used. The trend, on the contrary, seems to be toward using more of the old methods in batteries. Lowery²⁷ in his 1966 attitude study used word association, a projective test, and sentence completion. Hicks²⁸ in a 1967 study of a multidimensional approach to attitude measurement found that the direct method was superior to the indirect method. Blankenship used a number of approaches to measuring teacher attitudes, of which the instructor's rating was least useful. Zweig²⁹ used a combination of error choice and a Likert scale to measure attitudes.

²⁵John E. Anderson and Melvin C. Neely, "Attitude of Science Camp Students Toward Various Sciences," Science Education, 51 (April, 1967), 273-275.

²⁶Jacob W. Blankenship, "The Effectiveness of Four Methods of Determining Science Teacher Attitudes Toward a New Biology Program," School Science and Mathematics, 66 (December, 1966), 831-833.

²⁷Lawrence F. Lowery, "Development of an Attitude Measuring Instrument for Science Education," School Science and Mathematics, 66 (May, 1966), 494-503.

²⁸Jack M. Hicks, "Comparative Validation of Attitude Measures by the Multitrait-multimethod Matrix," Educational and Psychological Measurement, 27 (1967), 985-995.

²⁹Joseph P. Zweig, "A Compound-Attitude Scaling Technique for the Measurement of Partisanship in Labor-Management Issues," Journal of Applied Psychology, 51 (October, 1967), 382-386.

Research Findings

Contrary to what one would expect, Faust³⁰ found that there was a low correlation between attitude and achievement of elementary school children in selected subjects. Jackson and Lahaderne found that there was a negligible correlation between student satisfaction with school and their scholastic scores. Their study also indicated that the teachers' estimations of student attitude were more closely related to the students' academic records than to their expressed attitudes.

They commented:

In educational terms, students who are doing well in school might be expected to express contentment when asked to describe their school experience, and those who are doing poorly might be expected to express discontentment. Surprisingly, however, educational research has not yet provided a confirmation of this logically compelling expectation. Indeed, over the past 25 years an impressive amount of evidence has accumulated showing that scholastic success and attitudes toward school are typically unrelated to each other.³¹

Kurtzman found similar unexpected results in a study of creative children: "In the case of both sexes, there is evidence that the more creative a student is, the less he likes school."³² Kurtzman qualified his findings by observing that the more creative children had the more

³⁰ Claire Edward Faust, A Study of the Relationship Between Attitude and Achievement in Selected Elementary School Subjects (Dissertation, University of Iowa, August, 1962).

³¹ Philip W. Jackson and Henrietta M. Lahaderne, "Scholastic Success and Attitude Toward School in a Population of Sixth Graders," Journal of Educational Psychology, 58 (February, 1967), 15.

³² Kenneth A. Kurtzman, "A Study of School Attitudes, Peer Acceptance, and Personality of Creative Adolescents," Exceptional Children, 34 (November, 1967), 162.

questioning minds and would "therefore tend to be more critical of anything they would be asked to evaluate."³³

Wick and Yager found that a certain portion of the students showed a decrease in attitude while none showed a comparable increase, that grades are not important in determining a student's attitude toward a course, and what does matter is the teacher. This seems to substantiate Crowder's estimate that "four-fifths of the results [reading] came from the teacher's interest and enthusiasm and only about one-fifth came from the method used."³⁴

Mitchell and Shepherd's study showed that attendance records are a poor indicator of attitudes for younger children, that children like school less and less as they progress through the schools, and that there seems to be a socioeconomic relationship with attitudes. Dorney³⁵ found that reading instruction was helpful in reducing crime, alleviating maladjustment, and modifying attitudes. He wondered if the school produced the problem by forcing the children.

Battle³⁶ found that there was not a close relationship between what students said about their schools in general and their attitudes

³³ Ibid.

³⁴ Alex B. Crowder, Jr., "Actions Speak Louder Than Words," Texas Outlook, 51 (October, 1967), 37.

³⁵ William Patrick Dorney, "The Effectiveness of Reading Instruction in the Modification of Attitudes of Adolescent Delinquent Boys," The Journal of Educational Research, 60 (July-August, 1967), 438-443.

³⁶ Jean Allen Battle, Techniques and Instruments for Measuring Certain Student Human Relations (Dissertation, University of Florida, January, 1954).

expressed concerning specific parts of the school, that a student's willingness to obey a particular authority was not necessarily an indication of a positive attitude toward that authority, and that students of popular teachers scored high on certain of the attitude scales.

Neale and Proshek found that student evaluations of school-related phrases were increasingly negative as grade in school increased. They suggested that the schools were failing to fulfill their objectives.

Austrin³⁷ used an attitude scale (Rothman's Multidimensional Orientation Scale) to identify high and low achievers, and Hummel and Sprinthall³⁸ used an attitude instrument to identify the characteristics of underachieving students.

Frey et al.³⁹ found in a study of attitudes and programmed instruction that in time both achievement and attitude dropped while performance stayed high and error rate did not increase. Johnson⁴⁰ found that teachers' attitudes toward research reflected the head

³⁷ Harvey R. Austrin, "Cross Validation of an Attitude Scale for the Identification of High and Low Achievers," Journal of Educational Research, 58 (May-June, 1965), 426-428.

³⁸ Raymond Hummel and Norman Sprinthall, "Underachievement Related to Interests, Attitudes and Values," Personnel and Guidance Journal, 44 (December, 1965), 388-395.

³⁹ Sherman H. Frey, Shinkichi Shimabukuro, and A. Bond Woodruff, "Attitude Change in Programmed Instruction Related to Achievement and Performance," Audio Visual Communication Review, 15 (Summer, 1967), 199-205.

⁴⁰ Margaret E. B. Johnson, "Teachers' Attitudes to Educational Research," Educational Research (November, 1966), pp. 74-79.

administrator's attitudes, and Goldberg⁴¹ found that children's attitudes toward their teachers were a reflection of their personality characteristics and implied that information on the child's personality would be helpful in selecting the teacher for him.

Indirect Methods

In contrast with direct methods of attitude measurement are the indirect methods which include projective devices such as the Thematic Apperception Test and the Rorschach Test.⁴² These purely projective devices will not be treated here, since they do not lend themselves well to statistical validation.⁴³ Anastasi wrote:

A major trend in personality testing today is the development of a wide variety of simple and comparatively objective tests, which call for perceptual, cognitive, or evaluative activities. In common with the previously discussed situational tests, these techniques can be characterized as relatively structured and disguised. Rather than attempting to utilize complex, lifelike, realistic situations, however, these tests present the examinee with an artificial task bearing little or no resemblance to the criterion to be predicted. The tests under consideration represent efforts to identify behavior that may serve as a valid predictor of a criterion, without being a direct sample of criterion behavior. For this reason, these techniques have sometimes been described as "indirect" tests.⁴⁴

⁴¹Janice B. Goldberg, "Influence of Pupils' Attitudes On Perception of Teachers' Behaviors and on Consequent School Work," Journal of Educational Psychology, 59 (February, 1968), 1-5.

⁴²Floyd L. Ruch, Psychology and Life (New York: Scott, Foresman, 1948), pp. 555-561.

⁴³Samuel A. Stouffer, Social Research To Test Ideas; Selected Writings (New York: Free Press of Glencoe, 1962), p. 236.

⁴⁴Anastasi, p. 525.

Remmers⁴⁵ described eight indirect measures of attitudes: word association, visual stimulation (Rorschach, T.A.T.), expressive movement (graphology, etc.), play (drama, etc.), sociometry, rating scales, empathy (rating another person's attitude), and error-choice (clue to bias).

Campbell organized attitude tests into four categories: non-disguised-nonstructured (interview, free response, essay), disguised-nonstructured (projective tests, Rorschach, T.A.T.), and disguised-structured (objective testing of attitudes).⁴⁶ Further describing the disguised-structured tests, Campbell explained that the respondent is seeking right answers. "Rather than stressing the freedom and lack of structuring, there is an attempt to diagnose attitudes from systematic bias in the performance of an objective task."⁴⁷ He produced a formula for the construction of such a test:

Find a task which all of your respondents will take as objective and in which all will strive to do well. Make the task sufficiently difficult or use a content area in which the respondents have had little experience or opportunity for reality testing. Load the test with content relative to the attitude you study. Look among the responses for systematic error, or for any persistent selectivity of performance. If such be found, it seems an adequate basis for the inference of an attitude.⁴⁸

⁴⁵H. H. Remmers, Introduction to Opinion and Attitude Measurement (New York: Harper, 1954), Chap. 8.

⁴⁶Campbell, p. 163.

⁴⁷Ibid., p. 166.

⁴⁸Ibid., p. 163.

Regarding reliability of disguised-structured tests, Campbell wrote:

With regard to the level of response consistency, it should be noted that direct tests have much higher reliability coefficients than do indirect ones, especially when the number of items and time of administration are considered. Of course, this consistency is in part conscious, voluntary, and possibly superficial--in contrast to the involuntary "bias" in performance achieved by many indirect tests.⁴⁹

Summers,⁵⁰ writing about indirect measurement of attitudes, described four disguised-structured types of instruments. The first was the information test in which attitudes are inferred from the subject's errors and retention. The second type was the inferring of attitudes from a subject's estimation of someone else's attitude. The third was the Morgan system⁵¹ in which attitude is inferred from systematic logical bias as demonstrated in the choice of syllogisms. The fourth type inferred attitudes from the subject's systematic bias in perception and memory. Summers cautioned that the shortcoming of these direct methods was that they produced an artificial environment between the instrument and the subject's attitude.

Morgan, referring to his new instrument, wrote that:

The public opinion analyst is in need of a means for discerning the true attitude of a respondent even when he may not himself know what his real viewpoint is, or when he may be reluctant to express himself freely. The study uses such a method. It is essentially the utilization of distortions in the reasoning processes of respondents as an index of their personal convictions.⁵²

⁴⁹ Ibid., p. 176.

⁵⁰ Gene F. Summers, "Indirect Measurement of Attitude," Teachers College Journal, 37 (March, 1966), 198-202.

⁵¹ John J. B. Morgan, "Attitudes of Students Toward the Japanese," The Journal of Social Psychology, 21 (1945), 219-227.

⁵² Ibid., p. 219.

Finally a number of rather bizarre attempts are being made to measure attitudes from such variables as pupil size, body heat, skin conductivity, and so on. Stuart R. Johnson reported on one of these, the measurement of variations in the size of the pupil of the eye. Significant differences were not found, but the researchers felt that there was reason to look further. Recently, a local newspaper⁵³ reported that the amount of salivation was related to certain personality characteristics, though no work has been reported relating salivation to attitudes.

Attitude Measurement--Young Children

Wrightman, Nelson, and Taranto⁵⁴ described the making of a scale for young children to rate their morale toward the school building, the quality of instruction and instruction materials, the school administration and rules, the community support of the school, their relationship with other students, the teacher-student relationship, and their general feeling toward school. They contended that the Coleman Report⁵⁵ emphasized the need for such an instrument and that there were few comprehensive instruments.

⁵³"Lemon Juice Unmasks Introverts," St. Petersburg Times (December 15, 1967), p. 14A.

⁵⁴Lawrence S. Wrightsman, Ronald H. Nelson, and Maria Taranto, "The Construction and Validation of a Scale to Measure Children's School Morale," A paper presented at AERA (Chicago, February 8, 1968).

⁵⁵James S. Coleman and Others, Equality of Educational Opportunity (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, 1966).

Williams and Roberson⁵⁶ reported on a method of assessing racial attitudes of pre-school children, using stimulus objects of different colors. Then using positive and negative words, the children evaluated the objects. This was a form of the semantic differential because the negative words seemed to cluster about the black concept. They felt that by using different stimulus pictures, pre-school children's attitudes toward all kinds of things could be measured.

Horowitz and Horowitz⁵⁷ developed an instrument to measure social attitudes. They compiled a set of pictures and asked the respondent to select one that did not belong. The child's attitude was inferred from his systematic choices.

Cohen⁵⁸ used a structured projective interview to study the attitudes of primary-grade children toward their school and teacher. The children were shown stimulus pictures and were asked to tell what happened next or what just happened. Further development of the technique was planned because the children were very responsive.

Peel⁵⁹ described the measurement of the interests of young children by verbal methods. Verbal tests of information and vocabulary

⁵⁶ John E. Williams and J. Karen Roberson, "A Method for Assessing Racial Attitudes in Pre-school Children," Educational and Psychological Measurement, 27 (Autumn, 1967), 671-689.

⁵⁷ Eugene L. Horowitz and Ruth E. Horowitz, "Development of Social Attitudes in Children," Sociometry, 1 (January-April, 1938), 301-338.

⁵⁸ Sandra R. Cohen, "An Exploratory Study of Young People's Attitudes Toward School," American Psychologist, 22 (1967), 511-512.

⁵⁹ E. A. Peel, "The Measurement of Interests by Verbal Methods," The British Journal of Statistical Psychology, 12 (November, 1959), 105-118.

were designed for the school and leisure interests of children, and Radke and others⁶⁰ wrote about the use of stimulus pictures with very young children in interviews to probe perceptions and attitudes concerning social and religious groups.

Long, Henderson and Zeller wrote about a number of constructs--individuation, esteem, power, identification and social dependency--and their application in a self-concept test for young children. For self-esteem, they used the left position test (the stimulus to the left being considered more important), and they found that neuropsychiatric patients placed the self significantly further to the right than did the "sociometric stars."⁶¹ They found also:

In attempting to integrate these varied findings into meaningful patterns of self-other orientations, one notes first differences between the sexes. The boys' greater individuation, independence, and alienation from adults seem to reflect norms in the present culture for the male to be self-reliant and less person-oriented than the female. For both sexes the changes from the first grade to the second seems to represent a significant discontinuity requiring further investigation. After the second grade, the child appears to be⁶² growing closer to others (with the exception of teacher). . . .

⁶⁰ Marian Radke and Others, "Social Perceptions and Attitudes of Children," Genetic Psychological Monograph, 40 (1949), 327-447.

⁶¹ Barbara H. Long, Edmund H. Henderson and Robert C. Zeller, "Developmental Changes in the Self-Concept During Middle Childhood," Merrill-Palmer Quarterly of Behavior and Development, 13 (July, 1967), 204.

⁶² Ibid., p. 213.

The Studies of Mehrabian

Mehrabian's construct of linguistic immediacy is derived from various psychological constructs, such as psychological distance and approach avoidance. The basic concept is that certain statements are more immediate than others. For example, X and I share the same room is less than X is my roommate, and We don't like X is less than I don't like X.⁶³ Mehrabian explained:

Immediacy refers to the degree of intensity and directness of interaction between a speaker and the object he speaks about. Previous studies indicate that there is more immediacy in statements about liked others than in statements about disliked others. Also, when subjects are presented with parts of statements differing in degree of immediacy, but neutral in explicit attitudes, it is found that more immediate statements are judged as indicating a more positive quality of speaker attitude.⁶⁴

Mehrabian found that attitudes can be inferred from the postural orientation of a subject toward a listener,⁶⁵ that the context in which language occurs is pertinent (for example, nonimmediate language in an immediate context implies a more negative attitude than nonimmediate language in a nonimmediate context), and that untrained observers can systematically interpret immediacy of speech to infer attitudes.⁶⁶

He and Weiner found also that statements about failure-associated

⁶³ Albert Mehrabian, "Immediacy an Indicator of Attitudes in Linguistic Communication," Journal of Personality, 34 (March, 1966), 26-34.

⁶⁴ Mehrabian, "The Effect of Context . . .," p. 31.

⁶⁵ Albert Mehrabian, "Orientation Behaviors and Nonverbal Attitude Behaviors," Journal of Communication, 17 (December, 1967), 324-336.

⁶⁶ Mehrabian, "The Effect of Context . . ."

events were more nonimmediate than statements about success-associated events, that there were more nonimmediate statements about disliked people than about liked people among nurses, and that among students there were high nonimmediate scores for disliked people.⁶⁷

Mehrabian divided the immediacy construct into nine categories.⁶⁸ The first category is distance, the spatial distance between the communicator and the object of communication. The second category is time, the temporal distance between communicator and object. The third category is order of occurrence, the order of interaction of the communicator with the object in an interaction sequence. The fourth category is duration, the length of the communication about interaction. The fifth category is activity-passivity, willingness to interact as opposed to obligation to interact. The sixth category is mutuality-passivity, the reciprocity found in the interaction. The seventh category is probability, the degree of certainty of communicator-object interaction. The eighth category is communicator-participation₁ in which the totality of the communicator interacts with the object as opposed to only a part, aspect, or acquaintance of the communicator interacting with the object. The ninth category is communicator-participation₂, the individual interaction of the communicator with the object as opposed to the communicator being a part of a group of people who interact with the object.

⁶⁷ Albert Mehrabian and M. Weiner, "Non-immediacy Between Communicator and Object of Communication in Verbal Message: Application to the Inference of Attitudes," Journal of Consulting Psychology, 30 (October, 1966), 420-425.

⁶⁸ Mehrabian, "The Effect of Context"

Summary

Chapter II has been a survey of the literature and research relating to attitudes. The writer makes the following observations from this survey: The term attitude is a hazy concept that is defined and maligned variously by writers in the field; but at the same time the importance of positive attitudes both toward schooling in general and toward the specific areas of science and technology is unquestioned. Research, however, seems to suggest that the programs now in use are not accomplishing these positive attitudes and that in certain instances the converse is suggested, that negative attitudes are being developed.

The literature further suggests that the typical direct attitude instrument is measuring something else, not attitudes; but researchers continue to revert to established methods. This practice reminds the writer of the golfer who would search for missing golf balls only in open areas, replying to admonishments that the ball did not go that way by saying that the looking was a lot easier in the open areas.

Certain kinds of attitude measurement approaches seem to have a great deal of promise, particularly the disguised-structured methods, since they employ the advantages of the projective tests without requiring that the tester be a trained psychologist or clairvoyant to understand the responses and the advantages of the direct-structured methods in that the results are quantifiable. As a basic construct for a disguised-structured instrument, Mehrabian's linguistic construct of immediacy appears as a reasonable choice.

CHAPTER III

PROCEDURES AND TECHNIQUES

Introduction

In this chapter, the methods and procedures used in the production and testing of an instrument employing Mehrabian's construct of immediacy are described. The writer first describes the pilot study, which produced a prototype instrument, estimates of reliability, and approval of the study by the writer's supervisory committee. The writer next describes the development stage, during which the verbal cues and drawings were modified and refined, procedures were standardized, more estimates of reliability and validity were made, and the selection of items for the final forms of the instrument was made. The third stage is next described: A large number of students were tested with the revised instrument. Some of the students were retested with the same form, and some were retested with a different form of the instrument. Finally, the treatment of the data is described.

Pilot Study

Basic to the study, once again, is the construct of immediacy, or the closer a subject is physically or in linguistic reference to an object the more positive the subject's attitude toward the object.

When the immediacy construct is built into a disguised-structured test, furthermore, a very subtle indicator of attitudes could result.

There were two reasons for undertaking the pilot study. First, evidence had to be gathered that an instrument was feasible and that the reliability was such to justify subsequent prosecution of the study. This evidence was presented to the writer's supervisory committee and was adequate to secure approval.

The second reason for doing the pilot study was that there was an expressed need for such an instrument by the creative dramatics specialist of a local Elementary and Secondary Education Act Title III project. The specialist had been working with a group of culturally disadvantaged children to improve their language skills through participation in creative dramatics activities. In addition to the expected increases in verbal intelligence, which was measured by the Peabody Picture Vocabulary Test, the specialist felt that her students had become more positive in their attitudes toward school and wondered about an instrument to measure such attitudes. The instrument had to employ nonverbal responses and projective-type methods, besides being short and enjoyable to the students.

The children had been selected to participate in the program of creative dramatics by their teacher and the school's assistant principal for curriculum. The class from which they came was designated "transitional" which meant that the children were the lowest in ability among the school's first graders. The children who were selected for the creative dramatics program, furthermore, were supposed to have been those who were lowest in the transitional class, though it was found

later that some of the children were selected to produce a balance of reticent and outgoing children. The assistant principal reported that the teacher of the transitional class was generally thought of as outstanding.

The test that was used to attempt to measure attitudes of the children in the creative dramatics program consisted of ten pairs of drawings, which were made under the writer's direction by a professional artist. One picture of each pair was designed to be the more immediate, and this more immediate picture was cued with a more immediate verbal expression. Immediacy differences in the drawings were size (the more immediate drawing being larger), proximity (the more immediate subjects appearing closer together), and number (the more immediate drawing containing more figures).

The directions were very simple and needed no explanation, since the attitude test followed the administration of the Peabody Picture Vocabulary Test. The two tests had basically the same approach: the student selecting the correct picture by pointing. After the Peabody Picture Vocabulary Test was completed, the student was asked if he would like to play another game. After agreeing, the student would be shown a pair of pictures, and the examiner would ask, "Which is your class? This one? Or that one?" The more immediate picture would be cued with "this one?" and pointing by the examiner. Then the less immediate picture would be cued by "or that one?" and pointing. If the child were reluctant to respond, the procedure would be repeated. The children responded by pointing, sometimes saying "this one" or

"that one." The responses were recorded as right or left. The verbal cues "this" and "that" are in Mehrabian's distance category: distance: spatial distance between communicator and object.

Retesting was done the same day and also about six weeks later. Spearman rank-order correlations were computed, and 'U' tests of significant difference were calculated between the treated group's mean and the remainder of the class's mean, between the treated group mean and the whole class's mean, and between the treated group mean and a control class's mean.

The class's teacher and the teacher intern rated the children's attitudes, and Spearman rank-order correlations were calculated between teachers' ratings of the children's attitudes and the attitude test scores, and between teachers' rating of student attitudes and scores on the Peabody Picture Vocabulary Test. Teachers' ratings were accomplished by checklist. A list of the students was scored +, 0, or - by the teacher in response to seven questions: Which students seem to like school the most/least? Which students seem to like the teacher the most/least? Which students seem happiest/saddest? Which students come to school early/late? Which students seem most/least ready to start a project? Which students are absent most/least? Which students are most/least outgoing? In addition, the teacher and her intern were interviewed several times to produce more information about the children.

The content of the drawings used in the pilot study was as follows:

1. A teacher stands in front of a classroom, a blackboard behind her and one student seated in front of her. There is one empty chair (less immediate). The more immediate

drawing is exactly the same except that a student is seated in the chair.

2. Two figures stand close to one another, both touching a book which is between them (more immediate). The less immediate drawing shows two figures playing separately.
3. Four figures are in a room, three seated and one standing. They are quite apart (less immediate). The more immediate drawing shows five figures--three seated in chairs, one seated on the floor, and one standing--all very close.
4. The more immediate drawing shows a teacher standing directly behind a student who is seated at a desk. The teacher's hands rest on the back of the chair. The less immediate drawing shows the same seated student, but the teacher is putting something (perhaps a drawing) up on the wall.
5. The more immediate drawing shows the teacher again behind the seated student. The less immediate drawing shows the same seated student, but the teacher is apart, writing on the board.
6. The more immediate drawing shows three figures working together at a table. The less immediate drawing shows one figure working at a table.
7. The more immediate drawing shows a boy drawing figures on a blackboard. The less immediate drawing shows the same boy but further away.
8. The more immediate figure shows a boy seated at close range, eating an apple. The less immediate picture shows the same boy in less detail and further away.
9. The more immediate picture shows a woman's face in detail at close range. The less immediate picture shows the same woman, obviously a teacher, at a distance.
10. The more immediate drawing shows a teacher assisting a student who is writing at the blackboard. The less immediate picture shows a teacher standing before a student. She seems to be speaking.

The Development of the Instrument

After the pilot study results were presented to the writer's supervisory committee and the plans for the study were approved, a request was made of the Alachua County Research Committee for permission to develop the instrument in the local schools. Approval was granted, and permission was secured from principals of four schools to request cooperation from teachers. Table 1 describes those classes.

TABLE 1
DESCRIPTIVE DATA OF CLASSES USED IN PILOT AND
DEVELOPMENT STAGES

Class	Teacher	Grade	Students	Tested with
A	Female - Negro	1	25 Negro	Attitudes I, II
B	Female - Negro	1	28 Negro	Attitudes I, V
C	Female - White	K	20 White	Attitude I
D	Female - Negro	K	25 Negro	Attitudes I, III, IV
E	Female - White	K	16 White	Attitude III
F	Female - White	1	28 White	Attitudes IV, VIII
G	Female - White	4	30 White	Attitudes VI, VII
H	Female - Negro	6	32 Negro	Attitude IX
I	Female - White	5	25 White	Attitude IX
J	Female - White	K	28 White	Attitude IX

Several different approaches and sets of drawings were used to ascertain which pairs of drawings best discriminated, how long the instrument should be, and which techniques seemed practicable. These approaches can be described in nine steps:

Step One

The first step was to employ the instrument developed for the pilot stage in two kindergarten classes. Data on classes were collected to describe the central tendencies (mean and standard deviation). In addition, the teachers themselves took the tests and were interviewed about students who scored particularly high or low, or who demonstrated response patterns by scoring all right- or left-handed responses. One of the classes that participated in the pilot study was retested eight weeks later, using the pilot study instrument. Spearman rank-order and tetrachoric correlations were calculated to give more evidence of reliability.

Step Two

The second step was an attempt to determine the feasibility of using pairs of identical pictures with the verbal cues "this one?" and "that one?" Twenty-three pairs of identical pictures, most of which were from the original pilot study instrument, were compiled to make Attitude II (the pilot study instrument being dubbed Attitude I). The test was administered to one of the classes which took part in the pilot study. The student scores on Attitude II were then correlated (Spearman rank-order and tetrachoric correlations) with the scores on Attitude I. More interviews were conducted with teachers to try to explain high and low scores and response patterns. The drawings used that were in addition to those already described in the pilot study were: a cluster of pencils, a cluster of chairs, and a classroom scene without human figures.

Finally, part of Attitude II (the first ten pairs of drawings) was readministered to one of the classes with the verbal cues "This one? Or that one?" reversed. It was hypothesized that the direction in which the scores changed could be predicted; for if the force of the verbal cue were changed to the less immediate drawing, it would be reasonable to expect that the more immediate drawing would be selected fewer times among those with high scores to begin with, and that the more immediate drawing would be selected more times among those with low scores at the beginning. Those with medium scores (4, 5, 6) would be expected to change very little (plus or minus one). No formal statistical treatment of this information was undertaken.

Step Three

Attitude III was developed to test a set of improved pairs of pictures. The new pictures were larger than those used in Attitudes I and II and were considerably more artistic. The new test included three pairs of drawings at the beginning to establish the testing atmosphere, in other words, to make the children believe that there were right and wrong answers for each item. The drawings in the first pair were a book and a cup and saucer. In the second pair were a close-up drawing of a woman's face and a classroom scene, and in the third pair were a cluster of pencils and a cluster of chairs. For these preparation items the students were asked "Which picture is the book? This one? Or that One?" complete with pointing by the examiner. A second purpose of the preparation items was to break the response patterns that had become apparent while working with Attitudes I and II.

There were no other differences in administering the instrument, which was given to one kindergarten and one first-grade class. Again the teachers were tested with Attitude III, and they answered questions about their students during interviews with the writer.

The content of the drawings used in Attitude III is as follows (the first three have already been described):

4. The more immediate drawing shows a single figure of a young child slightly apart from a group of larger figures in a classroom. The less immediate drawing shows a greater distance between the figures.
5. The more immediate drawing shows a close-up of a male adult figure with three child figures surrounding him. The less immediate drawing shows the same scene further away with greater distance between the figures.
6. The more immediate drawing shows a classroom scene with the teacher's desk being most prominent and with vague figures standing around it. The less immediate drawing shows the same scene with the desk appearing further away.
7. The more immediate drawing shows a student close-up, reading a book in an otherwise empty (except for furniture) classroom. The less immediate drawing shows the same scene but further away.
8. The more immediate drawing shows a group of student figures of all ages walking on a sidewalk. Trees and shrubs appear on the opposite side of the street. The less immediate drawing shows approximately the same thing except that there is a single walking figure.
9. The more immediate drawing shows a close-up of a teacher figure with children clustered around her. The less immediate figure shows the same scene except further away.
10. The more immediate drawing shows a staircase scene with vague figures at the top with a single figure approaching them. The less immediate drawing shows the same scene with the single figure being more distant.
11. The more immediate drawing shows a table on which rest books and pencils. The less immediate drawing is the same except it is further away.

12. The more immediate drawing shows a classroom table with students and one teacher figure working around it. The less immediate drawing is the same except that the teacher figure is removed.
13. The more immediate drawing shows a teacher with her hand on a student's shoulder. The two are standing in a classroom in front of a group of students. The less immediate drawing is the same except that there is greater distance between the group of students and the teacher.
14. The more immediate drawing shows three students looking at what could be a picture of an aquarium. The less immediate picture is the same except that there is only one student.

Step Four

The fourth step was the testing of Attitude IV, which, in fact, was the same instrument as Attitude III, the only difference being the verbal cue employed. Mehrabian's seventh category of immediacy is called probability: the degree of certainty of communicator-object interaction. Probability was adapted to this test by asking the student "Which is your class? Is it this one? Or could it be that one?" The first cue reflects more certainty. The student, of course, responded in the usual way by pointing and perhaps saying something. No attempt was made to record student verbal expressions. Again central tendencies were calculated and the teachers were interviewed.

Step Five

The fifth step was the production of Attitude V, an attempt to make the drawings more discriminating, that is, to make them separate more those students with positive and negative attitudes. Two pairs of drawings were included in the beginning to break response patterns;

and two more were inserted in the body of Attitude V, one pair between 4 and 5 and one pair between 7 and 8. The first pair of response breakers were a bed and a ball; the second pair were a frying pan and a telephone; the third pair were a chair and an apple; and the fourth pair were a book and a cup and saucer. The eleven pairs of drawings were essentially the same as the drawings in Attitudes III and IV. The modifications made were designed to make the less immediate drawing even less immediate than it was by making the figures seem further away, further apart, and/or more vague. In some cases the more immediate picture was made even more immediate by making the figures larger, closer together, and/or more distinct.

A modification was also made in the verbal cues. Mehrabian's second category of immediacy is time: the temporal distance between communicator and object. This category was adapted to Attitude V by asking the student "Which is your class? Is it this one? Or was it that one?" The first cue is more immediate in time; the second is less immediate.

Attitude V was administered in two classes, and correlations (Spearman rank-order and tetrachoric) were made with previous scores on Attitude I. In addition, half of one class was retested a week later to get estimates of reliability from Spearman rank-order and tetrachoric correlations. The second half of the class was given Attitude V with the verbal cues reversed. It was hypothesized that the direction of changes in the scores could be predicted, though no formal treatment of the information was undertaken.

Step Six

The sixth step was the development of Attitude VI and the administration in a fourth-grade class. The instrument was designed to measure the attitudes of the subjects toward certain activities by recording their choices of more and less immediate drawings which were cued with more and less immediate verbal expressions. There were ten pairs of pictures, five male activities and five female activities. It was hypothesized that the boys' mean score on the male activities would be higher than the girls' mean score, and that the girls' mean score on the female activities would be higher than the boys' mean score. No formal treatment of the data was planned. The purpose of the step was to develop evidence to support immediacy as a construct for such an attitude instrument.

The verbal cues and directions were modified. The directions were to react to the pictures and to select one by pointing. The children were asked not to try to figure out the examiner's motive for giving the test.

The verbal cue was a simple explanation such as "The boy is playing basketball. This one? Or that one?" The child responded by pointing.

Finally seven of the children were retested two days later (Spearman rank-order and tetrachoric correlations gave evidence of reliability), and the teacher was interviewed to help explain high scores, low scores, and unexpected scores.

The content of the drawings used in Attitude VI is as follows

(the explanation given to the student is in parentheses):

1. The more immediate drawing shows a male figure bouncing a basketball. The less immediate drawing is the same, only more vague and further away (The boy is playing basketball).
2. The more immediate drawing shows a quarterback lining up his team. The less immediate drawing is the same, only further away and more vague (The boys are playing football).
3. The more immediate drawing shows a baseball pitcher with two members of the team. The less immediate drawing is the same only further away (The boys are playing baseball).
4. The more immediate drawing shows a group of girls walking on a sidewalk. The less immediate drawing is the same except that it seems further away and more vague (The girls are walking and talking).
5. The more immediate drawing shows a girl walking. She carries a walking stick and a pack on her back. The less immediate drawing is the same except that it is more vague and further away (The girl is hiking).
6. This pair is the same as number 5 except that the figure is a boy (The boy is hiking).
7. The more immediate drawing shows two girls sitting on the ground playing jacks. The less immediate drawing is the same except that it is further away and more vague (The girls are playing jacks).
8. The more immediate drawing shows a baseball batter and catcher in a stadium. The less immediate picture is the same except that it is smaller and there is a third figure visible behind the catcher (The boys are playing baseball).
9. The more immediate drawing shows three girls playing on the floor with dolls. The less immediate drawing is the same except that it is further away and more vague (The girls are playing with dolls).
10. The more immediate drawing shows three girls jumping rope. The less immediate drawing is further away and more vague (The girls are jumping rope).

Step Seven

Step seven was the development and administration of Attitude VII, which consisted of ten pairs of identical pictures taken from Attitude VI. The subjects used were the same class used in step six. The pictures were cued randomly with more or less immediate verbal cues, and it was hypothesized that the results would correlate with the results on Attitude VI, that the boys would score higher than the girls on male items, and that girls would score higher than the boys on female items.

Step Eight

Step eight was the development of Attitude VIII, an attempt to make the differences between the drawings more subtle. The verbal cues were the same as those used in Attitudes I, II, III, VI, and VII (This one? Or that one?), and the test was administered to a class that had already taken Attitude V. Spearman rank-order and tetrachoric correlations were calculated for the scores on the two tests.

Step Nine

The final step in the development of the final test form was the selection of items. The method used in the final selection of items was based upon the number of times an item was selected by students who scored high and by students who scored low. Those items that had the highest ratio of high selectors to low selectors were considered most discriminating. These were then arbitrarily rated "good" and "fair." The procedure was first to identify high and low scorers. These were students who picked the more immediate alternative in less than

25 percent or more than 75 percent of the opportunities. Next, percentages of low scoring students selecting a particular item from all the classes that took the test were added, and percentages of high-scoring students selecting a particular item were added. Then a ratio of high total percentages for each item was calculated. This procedure had the effect of weighting those items that were selected uniformly by either high or low scorers. Zero as a denominator was considered as infinity. Low ratios indicated poor discriminators, and high ratios (including infinity) were considered good or fair discriminators arbitrarily.

The pairs of drawings finally selected were then arranged randomly into two fairly well-balanced forms, which were called Attitude IX, Form A and Attitude IX, Form B. It was Attitude IX, Form A that was used in the final, large-scale testing of the instrument and in subsequent attempts to establish validity. Four examples of the drawings selected for Attitude IX, Forms A and B appear as Appendix A.

Attitude IX, Form A was subsequently administered in a sixth-grade class and a fifth-grade class. The scores were correlated (Spearman rank-order and tetrachoric) with the students' scores on the Student Opinion Poll.¹ The teachers were interviewed to help explain high and low scores and response patterns, and in some instances they ranked the children according to their attitude toward school.

¹Jacob W. Getzels and Philip W. Jackson, Creativity and Intelligence (New York: Wiley, 1962), pp. 260-269. (Condensed with permission of the publisher.)

In one case Attitude IX, Form A was given to students of a teacher regarded by experts as outstanding. Her estimates of the students' attitudes were then correlated (Spearman rank-order and tetrachoric) with the Attitude IX scores.

Large-Scale Testing

Background

The third stage in the production of an immediacy attitude instrument took place after the items were selected for Attitude IX. Arrangements had been made with the director of an ESEA Title III project in Orlando, Florida, to test the treated and control groups as a part of the project's evaluation program. The project itself was designed to enhance student self-concept through a program of instruction of teachers in self-concept enhancement, systematic classroom observations of teachers, provision for professional counseling help, and released time. There were fifteen classes in four schools in the treated group, and five classes in four schools in the control group. There had been an attempt to match the treated and control groups, and the project's pre-/postexperimental design for its evaluation was designed to measure differences that developed between the groups.

The immediacy attitude instrument, since it purported to measure a group's attitudinal response to the school environment, seemed to the director to be an appropriate evaluative device, particularly since it required a nonverbal response. It was assumed that the development

of a positive attitude toward the school environment was one of the expected results of the Title III project's procedure.

The director scheduled the testing by the writer and his assistant to take place on three days late in May, 1969. The treated and control classes were not identified, and the director arbitrarily assigned the writer and his assistant the classes to be tested.

Testing Procedure

The testing procedure was uniform, except for variations in time of day. The tester met with the teacher, obtained a class list, and began the testing, usually at a small table in a corner of the room. The teacher was asked to go right on with her teaching as though no one were there. Generally an attempt to conserve time was made by having one child waiting, though not observing, while another was being tested. Each child sat down in front of the tester who began by saying "We're going to play a little game, OK? I want you to point at some pictures. I want you to tell me which picture is the class? This one? Or that one?" The pair of drawings presented to the child was a practice item. One drawing obviously was a group of boys playing baseball; the other was a vague drawing showing children around a table with a blackboard behind them. When a child incorrectly pointed to the baseball scene, the examiner asked him what the drawing was or explained to him what it was, and then the test was begun over again. When the child responded correctly, the examiner said, "Yes, that's the class, just like this room is a class; isn't it?" At this point the examiner pointed all around the classroom. The purpose of this exchange was

to assure that future references to the word class would be understood. A second pair of drawings--one a teacher writing at the blackboard, the other a man hiking--was presented to break the right-left response pattern, the tendency of the children to select all the drawings on the right or on the left. The ten pairs of drawings that constitute Attitude IX were then presented. The question would be asked, "Which is your class (or in some cases "school" instead of "class)? This one? Or that one?" The children waited for the cues to be presented completely before pointing to their choice, overly eager children having been admonished during the practice items to "Wait 'til I finish before you point." The examiner attempted to force the child to look at the picture being cued by pointing at the picture until the child looked at it (movements of the eyelashes were the cues to which picture was being looked at), though this was not always possible. The responses that the children made were accepted by the examiner who said "OK" to each response. The procedure was repeated until all ten pairs of drawings were done. The responses were recorded by checking either the right or left side of a number that corresponded to the item number on an answer sheet that accommodated ten scores. In each case it was the examiner's right or left.

Scoring the Tests

The answer sheets were scored by an answer key that fit over the answer sheet. Five student scores were summed without moving the answer key. Two keys were used, one to sum the more immediate responses and one to sum the last cued item. Scores were placed at the bottom

of each child's record; and, later, IBM cards were punched with the following information: student identification number, scores of immediate and last-first items, response on each item, class identification, and a special column for students exhibiting right-left patterns.

Questionnaire

In order to learn more of the characteristics of students who exhibited response patterns, a questionnaire was sent to the teacher of each child in the Orlando sample who exhibited such a pattern. This questionnaire appears as Appendix B. Comparisons were made within the sample between the sexes, races, type of response pattern and the like.

Reliability

Reliability, or the ability of an instrument to measure consistently over time, was established in this study from the beginning. The "dependability-reliability coefficient," described by Cattell, "has been defined as that obtained by an essentially immediate retest (using the same administrator and scorer)."² Test-retest information was gathered in this manner during the pilot study and from time to time during the development of the various Attitude instruments. Also, during the development stage of the study, retesting was done after a number of weeks had elapsed to produce more information from which to estimate

²Raymond B. Cattell, "Validity and Reliability: A Proposed More Basic Set of Concepts," Educational and Psychological Measurement: Contributions to Theory and Practice, eds. Payne and McMorris (Massachusetts: Blaisdell, 1967), p. 62.

reliability. In each of these instances it should be remembered that the instruments were probing different approaches for the use of the immediacy construct and little meaning can be attached to the correlations found between instruments.

The reliability of the final form of the immediacy instrument was designed to be estimated from three sources of information--a retesting of approximately 10 percent of the children the same day that the first test was given, a testing on the same day with a second form of the instrument, and a split half (even-odd) treatment. In each case the tool for establishing the reliability was the Spearman rank-order correlation formula,³

$$\rho = 1 - \frac{6\sum D^2}{n(n^2-1)},$$

where ρ is the coefficient of correlation, D is the individual difference in rank, and n is the number of ranked individuals. In some instances the more informal tetrachoric correlation coefficient⁴ was also calculated because the writer felt that this statistic realistically described the data. The tetrachoric statistic can, at least, give an indication of the direction of error, and for this reason it is usually enclosed in parentheses.

Reliability, then, was an estimate developed from a thorough examination of the various correlations that developed during the

³Solomon Diamond, Information and Error (New York: Basic Books, 1959), p. 242.

⁴Leone Chesire, Milton Saffir, and L. L. Thurstone, Computing Diagrams for the Tetrachoric Correlation Coefficient (The University of Chicago, 1933).

course of the study. The only correlations that were corrected were those associated with the split-half test of internal consistency, and in that instance the Spearman-Brown prophecy formula⁵ was used:

$$r_{\pi} = \frac{2r}{1+r}$$

where r_{π} is the total test reliability and r is the original reliability (correlation) between halves.

Treatment of the Data

During the pilot study Pearson product-moment correlations were calculated by using the formula:⁶

$$r = \frac{N\sum xy - \sum x \sum y}{\sqrt{[N\sum x^2 - (\sum x)^2] [N\sum y^2 - (\sum y)^2]}}$$

where r is the coefficient of correlation, N is the number of students, x is the score on one measure, and y is the score on a second measure.

A second measure of correlation was the Spearman rank-order formula, and a third measure of correlation was the tetrachoric coefficient of correlation, a more informal statistic that was interpolated from a chart. The procedure in estimating the tetrachoric correlation was to dichotomize individual scores into upper and lower halves, to count the number of individuals occupying upper halves on both measures,

⁵ Diamond, p. 198.

⁶ Ibid., p. 182.

and to read the ratio of these individuals to the total number into a chart⁷ from which the tetrachoric correlations were interpolated. In some instances the ranks were held by several individuals in which case a fraction of the total number of individuals of a particular rank who fell in the upper half were counted, that fraction being based upon the number of that particular rank needed to complete the upper or lower half. For example, if three more individuals were needed to complete the upper half and there were ten individuals in the next rank who could be considered eligible to fill those three places, three-tenths of the total number of this particular rank who fell in the upper half of the first measure would be counted.

In the statistical description of populations, means (\bar{x}) were calculated by dividing the sum of scores by the number of scores (N). Standard deviations (s) were calculated by taking the square root of the difference between the sum of the squares of scores and the square of the mean divided by the number of scores when that number was thirty or more. When the number of scores was less than thirty, the difference was divided by the number of scores less one.

To examine differences between groups, a simple analysis of variance test⁸ was used first, and then "t" tests of significant differences between means were calculated by computer.⁹ In other instances

⁷Chesire, Saffir, and Thurstone, Table a = .50.

⁸James W. Popham, Educational Statistics (New York: Harper and Row, 1967), Chaps. 11 and 12.

⁹"t Ratio for Unrelated Groups," University of Florida, College of Education, Computer Program 621.

"t" tests were calculated by using the formula:¹⁰

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{s^2}{N_1} + \frac{s^2}{N_2}}}$$

The null hypothesis of homogeneity, that there are no differences between the variances of the groups being compared, was tested by dividing the largest variance by the smallest variance and by reading the resultant ratio into a table.¹¹ In each case this null hypothesis was accepted.

There were three sets of null hypotheses developed for the large-scale testing in Orlando, Florida. The first set included that there were no mean differences between treated and control groups, and two similar hypotheses excluding first the one-way response pattern scores and then all of the response pattern scores. The second set of null hypotheses was that there were no mean differences between the subgroups of boys, girls, whites, and nonwhites. The third set of null hypotheses was that there were no mean differences among the treated classes and among the control classes.

¹⁰Diamond, p. 113.

¹¹Popham, Table G.

CHAPTER IV

PRESENTATION AND TREATMENT OF DATA

Introduction

In this chapter the data are presented and analyzed. The order followed is the same as in Chapters I and III: First, the pilot study data are presented and analyzed. Second, the various data collected during the development stage are presented and analyzed, along with observations from the interviews. Third, the data collected during the large-scale testing are presented, along with analysis of the questionnaire results. Finally, data relating to reliability and validity are presented and analyzed. In each case, this chapter will describe the data that were collected from the procedures described in Chapter III. In other words, the information presented in each step in this chapter relates to the procedure described for that same step in Chapter III.

Pilot Study

The pilot study instrument, afterward named Attitude I, was administered in only two classes during the pilot study. Originally there were ten items, but one was selected so few times that it was dropped from the analysis. Table 2 presents the descriptive information.

TABLE 2

DESCRIPTIVE DATA OF PILOT STUDY CLASSES THAT TOOK ATTITUDE I
(Highest Possible Score = 9)

Class	N	\bar{x}	s
A	25	4.44	2.2561
B	28	4.32	1.8064

The children's scores on Attitude I were then correlated with the teachers' ratings of the children's attitudes, using the Spearman rank-order formula and the tetrachoric correlation. Also correlations were made with the children's scores on the Peabody Picture Vocabulary Test. Table 3 summarizes the findings.

TABLE 3

SPEARMAN RANK-ORDER AND TETRACHORIC (In Parentheses) CORRELATIONS
BETWEEN ATTITUDE I SCORES, TEACHERS' RATINGS OF CHILDREN'S
ATTITUDES, AND SCORES ON THE PPVT
(There Were Two Teachers--One An Intern, A_1 --In Class A)

	A	A_1	B	PPVT
Attitude I	-.02 (.19)	.07 (.43)	-.35 (-.43)	.35 (.49)
Teacher A	--	.38 (.65)	--	.24 (.49)
Teacher A_1	.38 (.65)	--	--	.17 (.49)
Teacher B	--	--	--	.52 (.60)

It appears that there was little or no correlation between teachers' estimates of student attitudes and the scores the children made on Attitude I. At the same time it appears that the teachers' estimates more closely correlate with the scores the children made on the PPVT. This finding seems to support Jackson and Lahaderne's suggestion that teachers tend to confuse attitude with intellectual ability. Furthermore, Teacher A's rating and the ratings of her intern A₁ had a fairly high correlation.

Some of the children were retested with Attitude I the same day. Spearman rank-order, Pearson product-moment, and tetrachoric correlations were calculated to provide estimates of reliability. Table 4 summarizes that information.

TABLE 4
CORRELATIONS OF TEST-RETEST SCORES ON ATTITUDE I

Class	N	Spearman	Pearson	Tetrachoric
A	9	.46	.50	.49
B	18	.60	.59	.77

The purpose of Attitude I during the pilot project was to show differences in attitude between the treated group, which consisted of nine students from Class A, and the rest of Class A, and between the treated group and the control class, Class B. Table 5 summarizes the findings.

TABLE 5
MEAN SCORES ON TREATED AND CONTROL STUDENTS ON ATTITUDE I
(Not Counting #9)

	N	\bar{x}	s	t
Treated Group (A)	9	3.222	1.8559	-2.2908*
Untreated Group (A)	16	5.1250	2.2173	

* Significant beyond the 0.05 level.

Differences between Class A and Class B and between the treated group and Class B were not significant. The only differences that were significant were between the nine treated children and the rest of Class A, and the treated group was significantly lower. These were not the results that were being looked for. Furthermore, when the individual students' scores were looked at more closely (4,2,3,1,2,2,7,3,5), it appeared that there were two fairly high scores (7 and 5) among the generally low scores. The creative dramatics specialist was asked about the two children, and she reported that they should not have been there in the first place, since they were very aggressive, normal, and bright children. It was later discovered from the teacher and assistant principal that these were two of the children who had been put into the special class to produce a balance of reticent and outgoing children. In other words, if these two very normal children had been left out of the special class, the mean score would have been even lower.

Finally, two of the children who accounted for much of the error in the test-retest correlations were investigated more closely, and it

was found that one of the girls had only recently arrived. She scored high on Attitude I, but her teachers ranked her low. The second girl was ranked high by one teacher and very low by the other (the intern). The child's score on Attitude I was very low. Subsequent investigation indicated that the child was very bright but also very quiet and reserved.

The Development Stage

The presentation and analysis of the data collected during the development stage will follow the nine-step order of Chapter III.

Step One

The first step was the administration of Attitude I in two kindergarten classes, one in a predominantly white school (Class C), and one in a predominantly Negro school (Class D). Data describing central tendencies in these two classes are presented in Table 6.

TABLE 6

DESCRIPTIVE STATISTICS FOR TWO KINDERGARTEN CLASSES
ON ATTITUDE I (Including Item #9)

Class	N	\bar{x}	s
C	20	4.05	1.2762
D	25	4.84	1.6910

In Class C there were two one-way response patterns and one instance where the child was unable to respond. In Class D there were five one-way response patterns. In Class C the interview with the teacher did not produce evidence that the response patterns were

meaningful. One child in Class C who scored low (two of ten immediate items) was a year older than the other children, having been held back, which may or may not have had anything to do with the low score. There were no scores of eight or higher in Class C, and the teacher said that the class seemed very normal to her, neither very high nor very low in any way.

In Class D there were two children who scored low (two of ten immediate items). One of these was a boy described by his teacher as a fighter; the other was described as needing special help to succeed. There were also two high scores (eight and nine of ten). One of these was a student described by the teacher as a girl with a positive attitude, though it could not be ascertained from her behavior. The other was a boy who subsequently scored high on Attitudes III and IV, and who was described by the teacher as having a positive attitude, liking school, and always willing to start new tasks. Describing the children who exhibited response patterns, the teacher said that all of them would have to have special help in order to succeed in school.

Finally, Attitude I was administered a second time to Class A eight weeks after the first testing during the pilot study to obtain another correlation score to estimate reliability. The Spearman rank-order correlation was .47, and the tetrachoric correlation was .60. Attitude I was also administered to a number of teachers and administrators. The lowest score that the adults made was seven, and most scored nine or ten of the ten possible items. No records of these are offered because the adults seemed to have no trouble at all in picking out the more positive pictures.

Step Two

Step two was the testing in Class A of Attitude II, an instrument with pairs of identical figures. There were twenty-three items, the mean score was 12.95, and the standard deviation was 3.65. Students' scores on Attitude II were compared with scores on Attitude I, producing a Spearman rank-order correlation of .07 and a tetrachoric correlation of .19. Correlations of Attitude II with teachers' estimates of attitude were similarly nonproductive and were discontinued from this point on.

Three weeks after Attitude II was first given in Class A, it was given again with the cues reversed to test the effect of the verbal cue. Predictions were made in seventeen instances that the score would go up, go down, or remain essentially the same. Table 7 summarizes the findings.

In every case but one (student #12), the predicted direction of change occurred. This cannot be attributed to the changing of the cues, however, for there could have been other operating factors. It would be expected, for example, that all scores would regress toward the mean. Another possibility is that the order of cuing was the determining factor. In at least one instance the tester was fairly certain that the child was selecting the first item cued. Finally, the use of identical pictures seemed to produce negative reactions from the children. They seemed confused when the pictures were the same and became restless and diffident. One older boy, a sixth grader who was described by school personnel as having a positive attitude toward school, displayed no such

TABLE 7
THE EFFECT OF REVERSING THE VERBAL CUE
(ALSO REVERSING THE CUEING ORDER)
OF ATTITUDE II WITH CLASS A

Student #	First Score (on First Ten Items Only)	Second Score	Direction of Predicted Change	Actual Change
1	7	4	down	-3
2	4	5	+ or -	+1
3	6	5	down	-1
4	5	4	+ or -	-1
5	8	5	down	-3
6	8	3	down	-5
7	6	5	down	-1
8	2	7	up	+5
9	6	4	down	-2
10	2	4	up	+2
11	5	5	+ or -	0
12	6	10	down	+4
13	5	5	+ or -	0
14	7	2	down	-5
15	3	4	up	+1
16	2	5	up	+3
17	5	6	+ or -	+1

negative reactions, encountering no difficulties at all. He scored eighteen of twenty-three positive items on Attitude II and seven of ten on Attitude I.

Step Three

Step three was the testing of Attitude III in two classes, one a predominantly Negro kindergarten (Class D) and one a predominantly white kindergarten (Class E). The principal purposes of the testing were to estimate how the children would react to a longer instrument (14 items), to see if pattern-breaking items were effective, to correlate Attitude III results with previously taken tests (Class D had been tested with Attitude I in step one), and to interview the teachers to determine the meaning of the high, low, and response-pattern scores. The descriptive statistics are found in Table 8.

TABLE 8

DESCRIPTIVE STATISTICS FOR TWO KINDERGARTEN
CLASSES ON ATTITUDE III (Eleven Items)

Class	N	\bar{x}	s
D	20	5.75	1.80
E	16	5.75	0.86

A comparison of Class D's scores on Attitude I and Attitude III produced a Spearman rank-order correlation of 0.0 and a tetrachoric correlation of .31. The response patterns exhibited on Attitude I were repeated exactly on Attitude III despite the three pattern-breaking

items at the beginning. There were five one-way response patterns on both tests by the same children. In Class E there were four one-way response patterns. In neither class did the pattern-breaking items seem to be effective.

The teacher in Class D described the response-pattern children as needing special help to succeed in school. The interview and questionnaire were of little assistance in determining the meaning of the children's scores on Attitude III any more than on Attitude I or Attitude II. The teacher seemed to rate the children uniformly high, commenting that all of the children seemed to like school. Furthermore, when relatively negative estimates were given, they seemed to the interviewer to be estimates of intellectual ability or ability to persevere in school-type activities (writing, etc.). The interviews seemed to show that those children who were good players (on the playground, etc.) scored high on the Attitude instruments. In Class D, the child who scored highest (ten of the eleven items on Attitude III and nine of ten items on Attitude I) was described as a girl who probably liked school, though one could not ascertain that from observing her actions.

Class E was described by the teacher as being remarkably uniform. She felt that all of the children were ready and able to do first-grade work, that there were no problems anywhere in the class. The range of scores in Class E on Attitude III was four to seven, and the standard deviation was very low, both statistics lending support to her statements. The one-way response patterns in this class were counted when all but one were either right or left, because there was none that was

completely right or left. Of the four counted, one was described as very mature (she was already six and writing her name), one was described as slower and very immature, and two were described as normal. The scores on Attitude III seemed to have no relation to the teacher's estimate of the children's intellectual ability.

Step Four

Step four was the testing of Attitude IV, which was essentially the same as Attitude III but with a different verbal cue. The descriptive statistics of the predominantly Negro kindergarten (Class D) and the predominantly white first grade (Class F) are presented in Table 9.

TABLE 9
DESCRIPTIVE STATISTICS FOR TWO CLASSES
ON ATTITUDE IV (Eleven Items)

Class	N	\bar{x}	s
D (Kindergarten)	20	6.25	2.1588
F (First Grade)	27	5.60	1.6468

The Attitude IV scores for Class D were compared with the scores the children made on Attitude III, producing 0.0 rank-order and tetrachoric correlations. Attitude IV scores were then correlated with the Attitude I scores, producing a Spearman rank-order correlation of .44 and a tetrachoric correlation of .31. In Class D there were again five one-way response patterns just as in Attitude I and Attitude III and for the same children. The interview with the teacher of Class D produced

little in addition to the information already reported, that the response-pattern children would need special help. One boy scored consistently low. His score on Attitude I was three of ten; he scored four of eleven on Attitude III and three of eleven on Attitude IV. He was described by his teacher as particularly slow.

In Class F there was only one one-way response pattern. This student was described by her teacher as a girl who had had many problems in her young life, including surgery, besides being very slow and needing special help. The girl was hesitant and lacking self-confidence. The rest of the interview was not particularly productive. One boy who scored eight of eleven was described as very mature, but a boy who probably did not like school because of parental pressure. Another boy who scored low, three of eleven, was described as particularly immature and behind the rest of the children.

One of the problems with Attitude IV was the verbal cue. The children were asked, "Is it this one? Or could it be that one?" Many, it seemed to the tester, were reasoning, "Well, it's not this one; so it could be that one." Then they marked the less immediate item.

Three children took the test a second time. The first child scored ten of eleven the first time and eight of eleven the second time. The second child scored eight of eleven both times, and the third child scored seven of eleven the first time and five of eleven the second time.

The teachers whose classes took Attitudes III and IV took the test themselves. The teacher of Class D scored eight of eleven, the teacher of Class E scored nine of eleven, the teacher of Class F scored seven of eleven, and an assistant principal scored nine of eleven.

Step Five

Step five was the testing of Attitude V in one first grade (Class B) of twenty-four predominantly Negro children. The scores on Attitude V were compared with the children's scores on Attitude I which they had taken during the pilot study. The mean of Class B on Attitude V was 5.75, and the standard deviation was 1.78. The Spearman rank-order correlation of Attitude V with Attitude I was $-.30$, and the tetrachoric correlation was $-.69$.

The main reason for the failure of most of the items on Attitude V was that the drawings were made too powerful; that is, the size and proximity variables, which in previous instruments had been kept at a minimum, were now made too great. The children were selecting the less immediate drawings, it seemed, because the figures were smaller, more like themselves.

The pattern-breaking items also failed to be of much use. Only one child who exhibited a response pattern (nine of ten) on Attitude I failed to do so on Attitude V. Another child, who scored nine of ten one-way responses on Attitude I, scored eleven of eleven on Attitude V. Another child, who scored nine of ten one-way responses on Attitude I, scored ten of eleven on Attitude V.

Half the children in Class B were retested a week later with Attitude V to estimate reliability. The Spearman rank-order correlation was $.08$, and the tetrachoric correlation was $.13$. The other half of the class was given Attitude V with the verbal cues reversed. It was hypothesized that the direction of the changes could be predicted. Table 10 summarizes the findings.

TABLE 10

THE EFFECT OF REVERSING THE VERBAL CUE
OF ATTITUDE V WITH CLASS B

Student	First Score	Second Score	Predicted Direction of Change	Actual Change
1	3	4	up	+1
2	5	5	+ or -	0
3	3	4	up	+1
4	8	4	down	-4
5	7	8	down	+1
6	3	3	up	0
7	6	2	down	-4
8	6	8	down	+2

In three of the eight instances, the predicted change did not occur. These findings cannot be attributed to the changing of the cues. Considering the correlations between the first and second testings, it would seem more appropriate to attribute them to chance and regression toward the mean.

Step Six

Step Six was the testing of Attitude VI, which was designed to measure the students' attitude toward certain boys' and girls' activities. The test was administered to thirty students in Class G, a predominantly white fourth grade. The class mean on Attitude VI was 6.0, and the standard deviation was 1.82. On the retests, seven

students' scores were compared, producing a Spearman rank-order correlation of .86 and a tetrachoric correlation of .91. The findings for boys and girls are summarized in Table 11.

TABLE 11

BOYS' AND GIRLS' REACTION TO MALE AND FEMALE ACTIVITIES
OF ATTITUDE VI (Scores Are Means of a Ten-Item Test)

Group	Male Activities	Female Activities
Boys	2.93	3.13
Girls	2.73	3.33

The boys did indeed score higher than the girls on the male activity items, and the girls did score higher than the boys on the female activity items. The differences, however, were not statistically significant.

The teacher of Class G was interviewed to obtain information on high, low, and unexpected scores. The girl who scored highest (ten of ten) was the only Negro child in the class. She was described as a weak student but an excellent athlete, a girl who enjoyed doing all kinds of activities. Four boys and a girl had high scores (eight of ten), but the teacher could attach no particular significance to their high scores. One student scored one of ten possible positive items. He was described as strange boy who only recently came to this country, and he was still having language and social adjustment problems in addition to an abnormal home life. There were quite a few reversals, that is, boys who had low male scores and high female scores,

etc. One girl scored three of five male items and zero of five female items. She was described as a tomboy who has to be discouraged from playing tackle football by her mother. Some of the boys who had reversals were described as manifesting in class attractions for girls' books and activities. Others who had reversals, however, were not explainable.

Step Seven

Step seven was the testing of Attitude VII, which consisted of pairs of identical drawings taken from Attitude VI. The instrument was administered in Class G. The mean of the ten-item instrument was 4.9, and the standard deviation was 1.47. Attitude VII when compared to Attitude VI produced Spearman rank-order and tetrachoric correlations of 0.0. The comparisons of boys and girls on the male and female activities are summarized in Table 12.

TABLE 12

BOYS' AND GIRLS' REACTION TO MALE AND FEMALE ACTIVITIES
OF ATTITUDE VII (Scores Are Means of a Ten-Item Test)

Group	Male Activities	Female Activities
Boys	2.36	2.70
Girls	2.64	2.42

In the case of Attitude VII, the findings are not as predicted and are the reverse of the findings of Attitude VI. However, there were no really high or low scores on Attitude VII, the range being

three to seven on the ten-item instrument. Also it seemed apparent to the tester that the instrument was irritating to the students. It made no sense to them to be choosing between two identical items, and they said so. The boy who scored one of ten on Attitude VI scored four of ten on Attitude VII, though on a retest of Attitude VII he scored one of ten again.

Step Eight

Step eight was the testing of Attitude VIII, an instrument employing more subtle differences between the drawings to correct for the failures of Attitude V. The instrument was administered in a first-grade class of 28 predominantly white children (Class F), producing a mean of 5.14 and a standard deviation of 1.46. The comparison of the children's scores on Attitude VIII with their scores on Attitude IV produced a Spearman rank-order correlation of $-.10$ and a tetrachoric correlation of $.19$. Interestingly, some of the response patterns that were apparent on Attitude IV failed to reappear. One student who had a complete one-way pattern on Attitude IV showed no pattern on Attitude VIII; another student who showed only a slight one-way pattern on Attitude IV showed nine of ten one-way responses on Attitude VIII. The interviews failed once again to produce meaningful evidence to explain the high, low, and one-way responses. It is interesting to note, however, that one student who scored eight of eleven on Attitude IV and eight of ten on Attitude VIII, scored eight of eleven on a retest of Attitude IV and seven of ten on a retest of Attitude VIII. Also, he volunteered to take the retest of Attitude VIII.

Step Nine

The final step in the development stage was the selection, more or less arbitrarily, of items for the two forms to be used in the large-scale testing. It was decided, again arbitrarily, that there would be ten items on each of the forms so that individual testing time would not exceed three minutes, that there would be two items at the beginning of the instrument, one to establish the meaning of the word "class" and the other to break response patterns, although this method had not previously proven particularly effective. Both items at the beginning had a second purpose of establishing a test atmosphere; the children believed that there were right and wrong answers.

The method for selecting the items has already been described in Chapter III. Briefly, the selection was based upon the number of times an item was selected by students who were high scorers compared to low scorers. These ratios are presented in Table 13. Those pairs of drawings, or items, with ratios of 4.0 or more were selected for the final forms to be used in the large-scale testing (Attitude IX, Forms A and B). The selected items are further described by Tables 14 and 15 in their final random order.

The two forms are fairly well balanced. The mean rating of Form A is 4.77; the mean rating of Form B is 4.51. Each form has half of the more immediate items being cued first, and each has six of ten more immediate items on the tester's right (student's left).

TABLE 13

RATIO OF HIGH SCORERS' SELECTIONS TO LOW SCORERS' SELECTIONS OF ITEMS
ON ATTITUDES I, III, V, AND VIII
(Underlined Ratios Were Selected for Use in Final Forms)

Instrument	Item										
	1	2	3	4	5	6	7	8	9	10	11
Attitude I	<u>4.1</u>	3.6	1.3	<u>5+</u>	<u>5+</u>	<u>4.5</u>	1.3	2.6	3.5	1.1	
Attitude III	2.2	2.0	<u>4.2</u>	2.8	1.6	2.5	2.2	<u>5+</u>	<u>5+</u>	<u>4.0</u>	<u>5+</u>
Attitude V	2.6	<u>5+</u>	<u>4.0</u>	1.3	<u>4.0</u>	2.2	<u>5+</u>	2.7	<u>5+</u>	1.3	<u>5+</u>
Attitude VIII	2.0	<u>4.0</u>	0.0	3.0	1.5	2.0	3.0	2.0	<u>5+</u>	2.0	

TABLE 14

DESCRIPTIVE DATA OF ITEMS SELECTED FOR ATTITUDE IX, FORM A

Item	Source	Rating	Order of Cue	Tester's Right or Left
1	Attitude V, #7	5+, Good	Second	Right
2	Attitude III, #9	5+, Good	First	Right
3	Attitude I, #5	5+, Good	First	Left
4	Attitude I, #6	4.5, Fair	Second	Right
5	Attitude VIII, #9	5+, Good	Second	Right
6	Attitude V, #11	5+, Good	First	Right
7	Attitude III, #10	4.0, Fair	Second	Left
8	Attitude V, #2	5+, Good	Second	Left
9	Attitude III, #3	4.2, Fair	First	Right
10	Attitude III, #8	5+, Good	First	Left

TABLE 15

DESCRIPTIVE DATA OF ITEMS SELECTED FOR ATTITUDE IX, FORM B

Item	Source	Rating	Order of Cue	Tester's Right or Left
1	Attitude I, #4	5+, Good	First	Right
2	Attitude III, #11	5+, Good	Second	Right
3	Attitude V, #5	4.0, Fair	First	Right
4	Attitude V, #9	5+, Good	Second	Right
5	Attitude III, #8	5+, Good	First	Left
6	Attitude III, #10	4.0, Fair	Second	Left
7	Attitude VIII, #2	4.0, Fair	First	Right
8	Attitude V, #3	4.0, Fair	Second	Right
9	Attitude I, #1	4.1, Fair	First	Left
10	Attitude V, #2	5+, Good	Second	Left

As a part of the final step (step nine) of the development of Attitude IX, two classes of older children were given an attitude questionnaire, the Student Opinion Poll, the results of which were compared with their scores on Attitude IX, Form A. The first class was a predominantly Negro group of thirty-two sixth graders (Class H). The second class was a predominantly white group of fifth graders (Class I).

The mean of Class H was 6.63, and the standard deviation was 1.61 on Attitude IX. The Spearman rank-order correlation with the questionnaire was .04, and the tetrachoric correlation was .37. There were two one-way response patterns and five first-last response patterns. A boy who exhibited the one-way response pattern was described by the teacher as a very slow child. She said that he was a particularly poor loser and felt the need to retaliate, that he had a quick temper, and that he was immature. The girl with the one-way pattern was described as a fairly bright child, but one who had been considerably upset lately because of a move her family was planning that would necessitate her leaving behind all her friends. Hers was one of the deprived families. The children who exhibited first-last response patterns were all girls, and four of the five were described as being maladjusted and coming from broken homes. The fifth was a newcomer, having arrived only nineteen days before. The teacher was asked about the eight children who scored high, eight or nine of ten, on Attitude IX, and for the most part the children were described positively, though there were negative remarks as well. The only low scorer, three of ten, was a new student about whom the teacher had little to say.

In Class I, a predominantly white class of fourth graders, the mean score on Attitude IX was 6.64, and the standard deviation was 1.66. The Spearman rank-order correlation with the attitude questionnaire was .37, and the tetrachoric correlation was .60. There were no one-way response patterns and six first-last patterns. No information was available from the teacher to explain any of the scores. An intern's ratings of students' attitudes, however, were compared with Attitude IX, producing a tetrachoric correlation of -.31. The intern's ratings compared with the questionnaire scores produced tetrachoric correlation of .65. One student, who selected only nine positive alternatives of the fifty items on the questionnaire (the lowest number in the class), scored ten of ten positive items on Attitude IX. Subsequently, the student's father described her as having a positive attitude toward school, liking and enjoying school, and earning good grades. He added that she was studying piano and was thought to have some talent. This finding seems to support Kurtzman's observation about creative children, that they scored low on the Student Opinion Poll.

Finally, as a part of step nine, Attitude IX, Form A was administered in Class J, a predominantly white kindergarten class whose teacher was very highly regarded as a professional educator. The teacher's ratings of her students' attitudes were compared with their scores on Attitude IX, producing Spearman rank-order and tetrachoric correlations of -.65 for the boys, and a Spearman rank-order correlation of -.18 and a tetrachoric correlation of .13 for the girls.

The intern's ratings of the children's attitudes compared with Attitude IX scores produced a Spearman rank-order correlation of .05 and a tetrachoric correlation of .49 for the girls, and a Spearman rank-order correlation of 0.0 and a tetrachoric correlation of .25 for the boys. Comparisons between the teacher's rating and the intern's rating produced a tetrachoric correlation of .25 for the boys and -.65 for the girls. There was only one one-way response pattern, produced by a child whose first language was not English and who had been experiencing a great deal of difficulties in school. There were three children who exhibited first-last response patterns. One of these was described by the intern as being a little immature and less social; another was described as having home problems; but no significance could be attached to the third. The teacher scored eight of ten and her intern scored ten of ten positive items on Attitude IX.

Large-Scale Testing

The large-scale testing took place in Orlando, Florida, late in May as a part of the evaluation program of an ESEA Title III Self-concept Project. The descriptive statistics are in Table 16. The total group is the combination of treated and control classes; the treated group consists of fifteen classes in four schools who received Title III project's treatment; and the control group consists of five classes in four schools who were matched to the fifteen treated classes but did not receive the Title III project's treatment.

TABLE 16

DESCRIPTIVE DATA FOR LARGE-SCALE TESTING OF ATTITUDE IX,
FORM A

Group	N	\bar{x}	s
Total Group	482	5.6058	1.5158
Treated Group	352	5.7074	1.5327
Control Group	130	5.3308	1.4271

The first null hypothesis was that there were no differences in mean scores on Attitude IX between the treated and control groups. The first test of this hypothesis was a simple analysis of variance. The test for homogeneity was within limits. Table 17 summarizes the results of that test.

TABLE 17

SIMPLE ANALYSIS OF VARIANCE OF TREATED AND CONTROL GROUPS
(Treated N=352; Control N=130)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	1	13.4660	13.4660	5.9212*
Within Groups	480	1091.6378	2.2742	
Total	482	1105.1038		

* Significant beyond the 0.05 level.

The F ratio is significant at the .05 level of confidence. Subsequently, a "t" test was performed. Table 18 summarizes the results of the "t" test between the treated and control groups, Table 19 summarizes the results of the same test with the one-way response patterns removed, and Table 20 summarizes the results with both the one-way and first-last response-pattern scores removed.

TABLE 18

A COMPARISON OF TREATED AND CONTROL MEANS
(Standard Error = 0.1548)

Group	N	\bar{x}	s	t
Treated	352	5.7074	1.5327	2.4333*
Control	130	5.3308	1.4271	

*Significant beyond the 0.05 level.

TABLE 19

A COMPARISON OF TREATED AND CONTROL MEANS
WITH ONE-WAY RESPONSE PATTERNS REMOVED
(Standard Error = 0.1740)

Group	N	\bar{x}	s	t
Treated	298	5.6913	1.6154	2.0733*
Control	115	5.3304	1.4904	

*Significant beyond the 0.05 level.

TABLE 20

A COMPARISON OF TREATED AND CONTROL MEANS WITH ONE-WAY
AND FIRST-LAST RESPONSE PATTERNS REMOVED
(Standard Error = 0.1870)

Group	N	\bar{x}	s	t
Treated	260	5.7346	1.6878	2.0150*
Control	109	5.3578	1.4994	

* Significant beyond the 0.05 level.

The second set of null hypotheses was that there were no differences between the boys' and girls' mean scores and between the non-whites' and whites' mean scores. Simple analysis of variance was the first procedure applied to test these hypotheses. Subsequently the pooled variance "t" model was used to test the difference between the means, the null hypothesis of homogeneity was accepted in each instance, and no significant differences were found. Tables 21 to 26 describe the findings.

TABLE 21

SIMPLE ANALYSIS OF VARIANCE OF BOYS' AND GIRLS' SCORES
(Boys N = 233; Girls N = 249)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	1	1.5918	1.5918	.6924
Within Groups	480	1103.5120	2.2989	
Total	482	1105.1038		

TABLE 22

SIMPLE ANALYSIS OF VARIANCE OF NONWHITES' AND WHITES' SCORES
(Nonwhites N = 372; Whites N = 110)

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	1	1.2645	1.2645	.5498
Within Groups	480	1103.8393	2.2996	
Total	482	1105.1038		

TABLE 23

A COMPARISON OF BOYS' AND GIRLS' MEAN SCORES
(Standard Error = 0.1382)

Group	N	\bar{x}	s	t
Males	233	5.6652	1.5639	0.8324
Females	249	5.5502	1.4639	

TABLE 24

A COMPARISON OF NONWHITES' AND WHITES' SCORES
(Standard Error = 0.1646)

Group	N	\bar{x}	s	t
Nonwhites	372	5.5780	1.4962	0.7415
Whites	110	5.7000	1.5699	

The third set of null hypotheses was concerned with the differences within the treated and control groups. Simple analysis of variance was used to test these hypotheses. Tables 25 and 26 summarize these results. In each case the null hypotheses of homogeneity were accepted.

TABLE 25

SIMPLE ANALYSIS OF VARIANCE OF FIFTEEN TREATED CLASSES

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	14	4.7670	3.1262	1.3453
Within Groups	337	783.0938	2.3237	
Total	351	826.8608		

TABLE 26

SIMPLE ANALYSIS OF VARIANCE OF FIVE CONTROL CLASSES

Source of Variation	Degrees of Freedom	Sum of Squares	Mean Square	F Ratio
Between Groups	4	2.2831	.5957	.2837
Within Groups	125	262.3939	2.0991	
Total	129	264.7770		

In each case, the F ratio was not significant, the differences not being enough to warrant further testing. Table 27 presents descriptive data on the treated and control classes.

TABLE 27

DESCRIPTIVE STATISTICS OF TREATED AND CONTROL CLASSES

Class	N	\bar{x}	Standard Deviation
Treated			
1	23	5.5652	1.5022
2	19	6.2632	1.5217
3	25	5.4400	1.1575
4	27	5.5185	1.0873
5	25	5.6667	1.5190
6	30	5.9000	1.7684
7	27	6.1852	1.6416
8	14	6.1429	1.4600
9	28	5.4282	1.3173
10	21	6.2857	1.6168
11	12	6.1667	1.7494
12	22	5.1364	1.5824
13	26	5.7308	1.5377
14	27	5.4074	1.7814
15	24	5.3333	1.5227
Control			
1	20	5.3500	1.3484
2	32	5.1562	1.5433
3	27	5.5556	1.4500
4	24	5.2917	1.4288
5	27	5.3333	1.3867

Finally, a questionnaire (Appendix B) was sent to the teachers of each child who exhibited a response pattern. The purpose of the questionnaire was to see if the children had any characteristics that could account for their test behavior. All the teachers returned the questionnaires, though one teacher returned hers too late to be included in some of the processing. The numbers used in the analysis were the combined agree and agree-a-little categories. Table 28 summarizes the results.

TABLE 28

QUESTIONNAIRE AGREEMENT RESPONSES FOR CHILDREN EXHIBITING RESPONSE PATTERNS ON ATTITUDE IX, FORM A (Numbers Are Rounded Percentages; Large Differences Are in Parentheses)

Question	Whole Group	Males	Females	White	Nonwhite
1	82	84	80	46 (41)	87
2	59	55	63	77 (20)	57
3	46	57 (24)	33	46	45
4	40	40	41	54 (16)	38
5	16	21	11	23	15
6	58	48	59	62	58
7	15	17	13	00 (17)	17
8	50	62 (25)	37	38	52
9	34	31	37	46	32
10	36	41	30	31	36
11	43	31 (16)	15	23	23
12	33	43 (21)	22	08 (28)	36
13	35	41	28	38	34
14	25	29	20	23	25

From the summarized, whole group data, little can be generalized because there are no comparable data for the remainder of the children who took Attitude IX. Comparisons can be made between the various sub-groups, and for this purpose differences amounting to fifteen percentage points or more were arbitrarily considered significant when describing the differences between groups. These differences are the numbers that appear in parentheses in Table 28.

The differences between the boys and the girls were that more boys were immature (#3), that more boys would have to have special help to succeed in school (#8), that more boys were emotionally disturbed (#11), and that more boys had perceptual problems (#12).

The differences between the whites and nonwhites werethat more nonwhites had lived in the area longer (#1), that more whites were considered normal, healthy and happy (#2), that more nonwhites had home problems (#4), that more nonwhites exhibited manifestations of immaturity (thumbsucking, etc.) (#7), and that more nonwhites had perceptual problems (#12).

A similar comparison was made between those children who exhibited one-way response patterns and those children who exhibited first-last response patterns. Those items with differences amounting to fifteen percentage points or more were items one, seven, and eight. For item one, 90 percent of the one-way response children had lived in the area for a year, compared to 75 percent of the first-last response children. For item seven, 23 percent of the one-way response children manifested signs of immaturity (thumbsucking, etc.), compared to 7 percent of the first-last response children. And for item eight, 54 percent of the one-way response children were described as needing special help to succeed in school, compared to 35 percent of the first-last response children.

Finally, comparisons were made between racial subgroups of the sexes. The subgroup comparisons were made to reduce further the differences found between the races and between the sexes. The results are described in Table 29.

TABLE 29

QUESTIONNAIRE AGREEMENT RESPONSES FOR CHILDREN EXHIBITING RESPONSE PATTERNS ON ATTITUDE IX, FORM A (Numbers Are Rounded Percentages; Large Differences Are in Parentheses)

Question	Nonwhite Males	Nonwhite Females	White Males	White Females
1	90	83 (50)	33	47
2	52	61 (22)	83	71
3	55 (21)	34 (33)	67 (38)	29
4	40	36	33 (38)	71
5	19	11 (22)	33 (19)	14
6	48 (20)	68	50 (21)	71
7	19	15 (15)	00	00
8	63 (25)	38	50 (21)	29
9	29	36	50	43
10	42	30	33	29
11	31 (16)	15 (18)	33 (19)	14
12	56 (30)	26	17 (17)	00
13	40	28 (22)	50 (21)	29
14	31	19	17	29

Again the differences between the various groups were arbitrarily considered significant if they amounted to fifteen or more percentage points. Compared to nonwhite females, the nonwhite males were more immature (#3), less ready to do second-grade work (#6), more in need of special help to succeed in school (#8), more likely to be emotionally disturbed (#11), and more likely to have perceptual problems (#12). Compared to nonwhite girls, white boys were more likely to have arrived recently (#1), more likely to be considered by their teachers as happy, normal, and healthy (#2), more likely to be immature (#3), more likely to be retained in first grade (#5), less likely to exhibit manifestations of immaturity (#7), more likely to be considered emotionally

disturbed (#11), and more likely to be slower than the usual first grader (#15). Compared to the white females, white males were more likely to have arrived recently (#1), more likely to be immature (#3), less likely to have home problems (#4), more likely to be retained in first grade (#5), less ready to do second-grade work (#6), more likely to need special help in order to succeed in school (#8), more likely to be considered emotionally disturbed (#11), more likely to have perceptual problems (#12), and more likely to be considered slower than the usual first-grade child.

The differences between some of the subgroups would not fit on Table 29; therefore, they are given in parentheses after the number of the item in the following comparisons: Compared with white males, non-white males were more likely to have lived in the area for at least a year (#1;57), less likely to be considered normal, healthy, and happy (#2;31), more likely to exhibit manifestations of immaturity (#7;19), and more likely to have perceptual problems (#12;39). Compared to white females, nonwhite males were more likely to have lived in the area for at least a year (#1;33), less likely to be considered normal, healthy, and happy (#2;19), more likely to be immature (#3;26), less likely to have home problems (#4;31), less ready to do second-grade work (#6;23), more likely to exhibit manifestations of immaturity (#7;19), more likely to need special help to succeed (#8;34), more likely to be considered emotionally disturbed (#11;17), and more likely to have perceptual problems (#12;56). Finally, compared to white females, nonwhite females were more likely to have lived in the area

at least a year (#1;26), less likely to have home problems (#4;35), more likely to exhibit manifestations of immaturity (#7;15), and more likely to have perceptual problems.

Comments made on the questionnaires by individual teachers appear in Appendix C.

Reliability

The reliability of the immediacy attitude instrument was planned to be comprehensive. The test was readministered to a portion of the students in Orlando, Florida, the same day as the first testing to give test-retest reliability data, and Form B was administered to another portion of the students the same day. Table 30 summarizes the test-retest data. Table 31 summarizes the data of the two forms.

TABLE 30

TEST-RETEST (Same Day) CORRELATIONS OF ATTITUDE IX, FORM A
(r = Spearman Rank-Order; Tetrachoric in Parentheses)

Group	N	r	
Entire Retest Group	58	.317	(.19)
Entire Retest Group (Less Response Patterns)	43	.336	
Class (Treated) 14	27	.452	(.60)
Class (Treated) 1	23	.239	(.25)
Miscellaneous Others	8	.155	

TABLE 31

FORM A - FORM B CORRELATIONS (Same Day) OF ATTITUDE IX
(r = Spearman Rank-Order; Tetrachoric in Parentheses)

Group	N	r	
Whole Group	87	.265	(.07)
Class (Treated) 6	25	.329	(.37)
Class (Treated) 5	27	.497	(.55)
Class (Treated) 3	8	.376	
Class (Control) 5	27	-.034	(-.13)

Finally, a series of split-half reliability tests were made. The even scores were correlated with the odd scores with the Spearman rank-order formula. The data for these correlations along with the Spearman-Brown prophecy formula corrections appear in Table 32.

TABLE 32
SPLIT-HALF RELIABILITY FOR ATTITUDE IX, FORM A

Group	N	r	r (Corrected)
Whole Group	482	.118	.211
Males	233	.196	.328
Females	249	.140	.246
Nonwhite	372	.180	.305
White	110	.186	.314
Nonwhite Males	173	.251	.408
Nonwhite Females	199	.122	.217
White Males	50	.274	.430
White Females	60	.150	.261
Class (Treated) 1	23	.467	.637
Class (Treated) 2	19	.630	.773
Class (Treated) 3	25	.153	.265
Class (Treated) 4	27	.161	.277
Class (Treated) 5	27	.116	.208
Class (Treated) 6	30	.260	.413
Class (Treated) 7	27	.183	.309
Class (Treated) 8	14	.146	.255
Class (Treated) 9	28	-.067	-.126
Class (Treated) 10	21	-.028	-.054
Class (Treated) 11	12	.413	.585
Class (Treated) 12	22	.064	.120
Class (Treated) 13	26	.328	.494
Class (Treated) 14	27	.384	.555
Class (Treated) 15	24	.093	.170
Class (Control) 1	20	.244	.392
Class (Control) 2	32	.183	.309
Class (Control) 3	27	.125	.222
Class (Control) 4	24	.094	.172
Class (Control) 5	27	.098	.179

CHAPTER V

SUMMARY, CONCLUSIONS, DISCUSSION AND IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

Introduction

This chapter presents a summary of the present study, a discussion of the conclusions based on the questions proposed to be answered in the first chapter, a discussion of the implications of the findings, and a series of suggestions for further research.

Summary

In this study an instrument employing Mehrabian's construct of immediacy was developed and tested. The study began with a pilot study of two first-grade classes that produced evidence that the approach did indeed hold promise for further development. After the pilot study stage came the development stage when modifications of the pilot study approach were made and tested. These modifications included making the drawings identical, making the drawings more artistic and larger, making the implied immediacy stronger and then more subtle, and changing the verbal cue to include three of Mehrabian's nine categories: the first (Distance), the second (Time), and the seventh (Probability). Also during the development stage the effect of cue reversal was

studied; and when the final instrument forms were assembled, attempts were made to establish the validity of the approach by comparing the Attitude IX results with scores from an established instrument.

The principal findings during the pilot and development stage were that there was little correlation between a teacher's estimates of attitude and Attitude instrument scores, and that students who exhibited response patterns seemed to be more likely to be described as immature, coming from troubled homes, and needing special help to succeed in school than nonresponse-pattern children. Also, children who scored high on the Attitude instruments seemed to be more likely to be described as having a positive attitude toward school than children who scored low, though this finding is purely subjective on the part of the writer. Using identical (differing only in verbal cue) drawings and drawings with a large difference in immediacy were equally ineffective, with identical drawings actually causing some problems. Response patterns were difficult, if not impossible, to break. In the final instrument there were two such items, but their purpose was to establish the setting as a test, one of the four criteria set up by Anastasi.¹

The results of the development stage were two fairly well-balanced forms of Attitude IX which were then tested on a large-scale basis. These final forms were compiled with certain limitations: the instrument had to be short (ten items), to contain test-setting

¹Anastasi, p. 526.

items, to be easily understood by the children, and to require non-verbal responses. The test sample was an ESEA Title III project which was attempting to develop actively positive student attitudes in a treated group of fifteen classes, and there were five control classes. There had been some attempt to match the control to the treated classes. The result of the testing was that the null hypothesis of differences between the mean scores of the treated and control classes was rejected first by analysis of variance and then by "t" tests with and without the various response-pattern scores. The other null hypotheses of differences were all accepted. Questionnaire returns from the teachers of response-pattern children described these children further as coming from broken homes, needing special help, and having psychological problems; and, though nonresponse-pattern children were described in the same way and many response-pattern children were described as normal, healthy, and happy, the high occurrence of these characteristics among the response-pattern children seemed to have some meaning if only when pointing out the differences between the races and between boys and girls.

Conclusions

At the outset of this study, two questions were proposed to be answered. The first question related to the practicability or feasibility of such an instrument and such an approach to administration. The pilot study demonstrated initially that the instrument was practicable, and the development stage probed the limits of pictorial and verbal cues as well as the limits of instrument length. These limits

were considered--as well as certain practical and local conditions-- in the compilation and administration of Attitude IX. During the entire study there was but one instance of a child's not being able to respond to the instrument, and in that single instance, the teacher reported that she was unable to influence the child to respond to any form of direction. The significant mean differences, furthermore, between the treated and control groups on Attitude IX demonstrate that the instrument is practicable with large groups. The design of the large-scale testing program precludes any conclusions about the cause and effect relationships. However, if the treated and control groups were the same at the beginning of the program, if the treatment was effective in producing a change in the treated group, and if the Attitude IX instrument measures the variable that changed, then the results of the large-scale testing with Attitude IX confirm that change by demonstrating a significant difference in the means.

The conclusion for the first question is that both the method of administration and the instrument itself are practicable and feasible.

The second question that the study proposed to answer related to the reliability and validity of the instrument. The first attempts to measure reliability came during the pilot study when some of the students were retested to produce a dependability-reliability coefficient in the manner described by Cattell.² The results were fairly encouraging, .46 and .60 (Spearman rank-order). Furthermore, subsequent

²Cattell, p. 62.

retesting after eight weeks with one of the classes produced a Spearman rank-order correlation of .47. During the development stage, correlation was unstable and produced little or no usable information, which is understandable when the exploratory character of the development stage is considered. During the large-scale testing stage dependability-reliability coefficient was .317, and the correlation between the two forms was .265, neither reading being particularly encouraging. The internal consistency as evidenced by the split-half correlation was .211 for the whole group. These findings support Campbell's³ observation that the indirect instruments have lower response consistency than direct instruments. Long, Henderson, and Zeller reported test-retest reliabilities ranging from .26 to .87 on a self-concept instrument that was similar to those used in this study.

The reliability estimates for the Attitude instrument developed in this study were consistently low. The three sources of information proposed at the beginning of the study--test-retest, two forms, and split half--produced coefficients of .317, .265, and .211.

The validity of the Attitude instruments was planned at the beginning of the study to be estimated from four sources. The first of these sources was a form of content validity, whereby the validity is established from its basis in theory and is attested by judges. In this study the judges were teachers and various other adults who could easily select the more immediate drawing once the principle was explained. Those adults who took the test uninstructed also scored

³Campbell, p. 176.

very high. Cattell⁴ refers to this kind of validity as "superfluous" and "utility" validity. In this study, therefore, the content source was not considered in estimating the validity of Attitude IX.

The second source of information was to be a criterion-related validity. Children's scores on Attitude IX were compared with their scores on an accepted measure of attitudes, the Student Opinion Poll. The Spearman rank-order correlations produced from these comparisons were .04 and .37.

The third source of information was also a form of criterion-related validity, comparison with the judgements of an accepted authority. The Spearman rank-order correlations of the authority teacher's rankings with Attitude IX scores were -.65 for the boys and -.18 for the girls.

The fourth source of information was what the National Committee on Test Standards described as "construct" validity.⁵ A number of hypotheses were developed and tested. For example, it was hypothesized that reversing the verbal cues would have a predictable result, that boys' and girls' attitudes toward certain activities would be demonstrable with immediacy instruments, and that high and low scores would describe children with positive and negative attitudes. This evidence was gathered throughout the study.

The conclusion for the second question of the study is that the reliability and validity estimates produced during this study are

⁴ Cattell, p. 121.

⁵ National Committee on Test Standards, pp. 78-79.

not sufficient to justify the use of the instrument in any situation other than an experimental employment to produce more information about the instrument itself. Certainly, however, the approach deserves further study.

Discussion and Implications

The fact that Attitude IX scores had low correlations with teacher estimates of attitude and with established attitude instruments is not necessarily a weakness of the approach. Research seems to indicate that teachers are not particularly good judges of student attitudes⁶ and that established attitude instruments have questionable validity themselves.⁷ It may be that the Attitude IX scores were in fact better estimates of the individual child's affective reaction to the school environment than the other measures.

The ten-item length of Attitude IX made certain reliability considerations difficult. If the instrument were lengthened to double or even triple, the reliability would increase considerably, justifying its use as an integral part of evaluation programs for such controversial programs as Headstart, Followthrough, and the various science curriculum innovations, which, though highly regarded by professional educators, are not wont to show objective evidence of gains in positive attitude.

⁶ Jackson and Lahaderne.

⁷ Kurtzman.

The abnormal characteristics of a great number of the children who demonstrated response patterns seems to suggest that there may be uses for instruments such as Attitude IX in psychological tests of personality. Long, Henderson, and Zeller suggest that such information might identify neuropsychiatric problems.⁸

Finally, the basic implication of this study is that new ways to measure objectively the attitudes of children are needed; and few new methods are being attempted. This study represents a departure from the usual direct methods, and hopefully, it will become a useful tool in assessing affective reactions of students to curriculum innovations.

Remmers writes that "The realization is rapidly growing that attitudes, the way individuals and groups feel about the various aspects of their world, are probably more determinative of behavior than mere cognitive understanding of this world."⁹ The instruments used to measure these attitudes, though, have employed direct methods which give indications of opinion, evaluations and the like, but give little or no indication of affective reaction. Instead what should be measured objectively are the individual's unannounced and undiscussed affective reactions, not what he thinks he should feel or what he thinks the tester wants him to feel.

⁸Long, Henderson, and Zeller, p. 204.

⁹Remmers, p. 15.

Recommendations for Further Research

Comparisons to estimate validity in this study were made with an established questionnaire and teachers' rankings of students. However, more comparisons should be made. For example, correlations of immediacy instrument scores should be made with self-rating scales and sociograms. For these studies, children of all ages should be tested. Particularly interesting would be a study to compare immediacy instrument findings with those studies that show a gradual decline in attitude toward school as grade in school increases. A similar study could compare changes in attitudes toward school during a single school year.

Although the immediacy instrument of this study was proposed to be a measure of group attitudes, case studies of students who scored particularly high or low should be made. The children's backgrounds and family lives could be compared, and their parents and teachers could be interviewed. Such studies could do much to establish the validity of the immediacy approach.

Attitude IX, Forms A and B were limited in length to ten items because of time restrictions. Furthermore, the writer estimated that only eight of the ten items were effective. Those eight items from Form A, together with eight more from Form B, could be used to make Form C, which could then be tested on a large scale. The purpose of this lengthening would be to increase the reliability estimates, especially internal consistency. To produce the estimates of internal consistency, both the Kuder-Richardson 21 and the split-half methods should be used.

Since the estimates of reliability for Attitude IX were generally low, it would seem only reasonable that the instrument should be lengthened. However, in addition to the lengthening, estimates of consistency over time should be made. During the development stage of this study, there was evidence that the immediacy instruments were fairly consistent after an elapsed period of several weeks. No attempt was made, however, to evaluate Attitude IX over time during the large-scale testing. Such a study should be made, using not only both forms of Attitude IX but also the revised and lengthened form.

Variations in the approach should be attempted to include more of Mehrabian's nine categories, and variations in the visual stimulus should be made to probe the effect of color and the like. Only three of Mehrabian's categories of immediacy were probed in this study, but certainly the remainder should be tried. For example, the third category is order of occurrence. More and less immediate pairs of drawings could be cued with pairs of words related to the attitude object. Then the sequence could be varied. In addition, there have been a number of studies relating preference for color, usually black and white, to attitude. Drawings incorporating such variables could be cued with words varying in immediacy for a possibly more profound effect.

Class mean scores varied in the large-scale testing stage of the study, and the implication drawn was that instructional method was responsible for the differences. Teacher characteristics and instructional practices should be related to the variations in

Attitude IX score, for it could be that such instruments could be used to evaluate teacher effectiveness in producing positive attitudes toward school. A great variety of studies could be undertaken. For example, classes could be tested with immediacy instruments over a period of a year. Trends and changes in attitude could be related to variables such as teacher age, sex, teaching methods, and the like. Such information could then be used to match teachers and students for greatest learning effectiveness. For another example, it would be interesting to relate teacher popularity to effectiveness in enhancing positive attitudes toward school. Another possibility would be to compare scores on an immediacy instrument with gains in knowledge and interest in some particular subject area to gauge a teacher's effectiveness in encouraging his students to pursue the field as a career.

Further study should be made into the meaning of the response patterns; for if they are suggestions that the child needs special help to succeed, that he is particularly immature, that he is likely to fail, or whatever, such information would be useful to teachers and anyone else interested in the child's welfare. One approach to studying the response-pattern children would be to make an intensive study of some of those who consistently exhibited strong patterns during the development and large-scale testing stages of this study. The children's parents and teachers could be interviewed, the children could be observed surreptitiously, they could be examined by a trained psychologist, and records could be kept for long-range studies. Study hypotheses could be developed to compare response-pattern children

with nonresponse-pattern children on such variables as home problems, discipline problems, immaturity, creativity, and the like.

Immediacy instruments should be developed to measure student attitudes toward school and school subjects at all levels. Scores could be compared with criterion groups such as school drop-outs, students with poor attendance records, and the like. These instruments could be used to evaluate the effectiveness of new programs in producing positive attitudes. For example, the effect of new science curricula on students could be compared with more conventional curricula in the affective as well as the cognitive domains. To make these comparisons, sets of drawings relating to the subject matter and activities of the field of study could be used as described in this study; or pairs of sentences, varying in immediacy and relating to the field of study, could be compiled to make an instrument. Particularly interesting would be comparisons of conventional curricula with innovative programs such as Headstart and Followthrough, using immediacy instruments. The significant differences encountered in the Title III project of this study suggest that such instruments would be helpful in evaluations.

A complete analysis of the data from the Orlando ESEA Title III project should be made to make comparisons with Attitude IX findings. Also, factor analyses should be done on both forms of Attitude IX, for some of the items seemed to be more effective than others. The Orlando data are quite comprehensive, including such measures as inferred self-concept ratings of the students by the teachers, verbal intelligence,

a student observation schedule, and video recordings of classroom behaviors. Comparisons of the Attitude test scores with these evaluation data would be helpful in establishing the validity of the immediacy approach. Also, should a longer and more refined instrument be produced, it could be tested on the criterion groups identified by such a study of the Orlando data.

The possibility should be explored of using immediacy instruments in conjunction with other instruments to measure attitudes; that is, the immediacy instrument could be used as a part of a battery such as the one developed by Lowery to measure attitudes toward science. The immediacy instrument would not be a burden to battery testing because of its simplicity; and since the value of battery testing is that there are a number of indicators, the immediacy instrument would be a useful and fitting addition.

APPENDIX A

EXAMPLES OF DRAWINGS USED IN ATTITUDE INSTRUMENTS



Attitude IX, Form B, Number 8, Less Immediate Drawing



Attitude IX, Form B, Number 8, More Immediate Drawing



Attitude IX, Form A, Number 2, Less Immediate Drawing



Attitude IX, Form A, Number 2, More Immediate Drawing

APPENDIX B

QUESTIONNAIRE FOR TEACHERS OF STUDENTS WHO EXHIBITED
RESPONSE PATTERNS ON ATTITUDE IX

QUESTIONNAIRE

June 2, 1969

Teacher's Name _____ Child's Name _____

This child exhibited a response pattern in the attitude test that was administered during late May. There is a possibility that the pattern might be helpful in diagnosing early some of the child's school problems. Your evaluation on these questions will help us determine if there are certain characteristics that are demonstrated by the response pattern. At the same time, we are fairly certain that there will be instances where the pattern will mean nothing. Your careful evaluations will give an indication of how often this is the case. At the end, there is space for your comments (or use the back). These will be appreciated and carefully considered regardless of content.

Please underline or circle your choice.

1. How long have you known this child? (almost all or all year)
(longer than all year) (less than all) (just a short while)
2. This child is completely normal, healthy, and happy.

	AGREE	DON'T	DISAGREE	
AGREE	A LITTLE	KNOW	A LITTLE	DISAGREE
3. This child seems particularly immature.

	AGREE	DON'T	DISAGREE	
AGREE	A LITTLE	KNOW	A LITTLE	DISAGREE
4. This child has home problems (broken home, etc.).

	AGREE	DON'T	DISAGREE	
AGREE	A LITTLE	KNOW	A LITTLE	DISAGREE
5. This child will be retained in first grade (or should).

	AGREE	DON'T	DISAGREE	
AGREE	A LITTLE	KNOW	A LITTLE	DISAGREE
6. This child is ready to do second grade work.

	AGREE	DON'T	DISAGREE	
AGREE	A LITTLE	KNOW	A LITTLE	DISAGREE
7. This child is a thumbsucker (or some such digit).

	AGREE	DON'T	DISAGREE	
AGREE	A LITTLE	KNOW	A LITTLE	DISAGREE

8. This child will have to have special help to succeed.
- | | | | | |
|-------|----------|-------|----------|----------|
| | AGREE | DON'T | DISAGREE | |
| AGREE | A LITTLE | KNOW | A LITTLE | DISAGREE |
9. This child is particularly quiet.
- | | | | | |
|-------|----------|-------|----------|----------|
| | AGREE | DON'T | DISAGREE | |
| AGREE | A LITTLE | KNOW | A LITTLE | DISAGREE |
10. This is a child who likes to play but does not like to get down to school-type work.
- | | | | | |
|-------|----------|-------|----------|----------|
| | AGREE | DON'T | DISAGREE | |
| AGREE | A LITTLE | KNOW | A LITTLE | DISAGREE |
11. This child is emotionally disturbed.
- | | | | | |
|-------|----------|-------|----------|----------|
| | AGREE | DON'T | DISAGREE | |
| AGREE | A LITTLE | KNOW | A LITTLE | DISAGREE |
12. This child has perceptual problems.
- | | | | | |
|-------|----------|-------|----------|----------|
| | AGREE | DON'T | DISAGREE | |
| AGREE | A LITTLE | KNOW | A LITTLE | DISAGREE |
13. This child is slower than the usual first grader.
- | | | | | |
|-------|----------|-------|----------|----------|
| | AGREE | DON'T | DISAGREE | |
| AGREE | A LITTLE | KNOW | A LITTLE | DISAGREE |
14. This child has trouble getting along with the other children.
- | | | | | |
|-------|----------|-------|----------|----------|
| | AGREE | DON'T | DISAGREE | |
| AGREE | A LITTLE | KNOW | A LITTLE | DISAGREE |

Teacher's Comments:

APPENDIX C

COMMENTS OF TEACHERS ABOUT STUDENTS WHO EXHIBITED
RESPONSE PATTERNS ON ATTITUDE IX

1. _____. _____ is very quiet and had to be encouraged to take part, but after conferences with his parents he has improved. His family is also of this nature--remarkably so.
2. _____. _____ has been hard to keep in school. She dropped out of 1st last year and started 1st again this year. She has had the visiting teacher call on her. The family is broken; yet a man lives in the home. About the middle of the year she tried to hide in the room and behaved oddly and ran away. A school representative went to the home and was sure she was there. This was not repeated. She has missed 40 days of school. She has dropped in reading due to this. She always will do her daily work quickly and quietly. It is messy, but correct. She seems to have ability. The school psychologist tested her.
3. _____. This is the brightest child in my room. She is well adjusted to school and shows enthusiasm for all activities.
4. _____. This is his 2nd year in school.
5. _____. This is his 2nd year in school.
6. _____. _____ does have some home problems. This may have some direct bearing on his thumbsucking. However, during the last 3 weeks of school, the thumbsucking periods lessened a great deal. As far as academics are concerned, _____ has done extremely well and should do well in second grade.
7. _____. _____'s first year of school was spent in a private school. This credit was not acceptable according to our county policies. I agree that she is slower than the usual first grader.
8. _____. Retained last year.
9. _____. Has been--last year [retained].
10. _____. Was retained last year. 74 I.Q.
11. _____. Very mature. Rated superior in National Achievement Test. She is one of the best adjusted, well-liked, intelligent children I have taught in thirty-six years. She speaks German fluently.

12. _____. Has something wrong with his neck. He has to have it checked often. Funny shape head also.
13. _____. It was discovered that this child was trying to read out of one eye. It appeared he was blind in the other eye. He was given glasses and that seemed to help a lot. He lives with his mother and grandparents.
14. _____. He lives with a lady. His mother visits him occasionally. Often he comes to school without breakfast and no lunch or money to buy lunch.
15. _____. At the beginning of the school year, _____ was an alert pupil, very outgoing, but she has become a day dreamer, and is constantly arguing with the other children.
16. _____. Seems well adjusted. Works well with peers. Comes from a broken home situation. Mother is not married. Comes to school neat, clean and well dressed. Seems to be getting love and affection at home. Is easily frustrated and immature in many of her school situations.
17. _____. _____ is a child who is well kept and taken care of. She seems to get along well with others. She will pout when she does not get her own way. Mother is a nurse or nurse's aid. Very neat and well dressed. Lady like and fastidious. Seems spoiled.
18. _____. _____'s home life is deplorable. He is one of many children in this school. Most of the time he comes to school without breakfast. He is tired and listless. It is just a sad situation all around.
19. _____. _____ has missed so many days at school she will have to be retained. She came toward the end of the school year. She is shy, unemotional, very withdrawn. Another pathetic home life situation. Broken home--nobody seems to care. . . . _____ has been tested by the school psychologist
20. _____. _____ was retained. He is a slow youngster, easily frustrated. He wants to be helpful, but to the exclusion of others. Very selfish about his things. I denote a pugnacious quality in him and a below-the-surface seething.

21. _____ is extremely vocal, outgoing and in many ways very likeable. He is not ready to settle down as yet. He loves to tell tall tales and expresses a very vivid imagination. There is some perceptual disturbance here. I believe his home situation is adequate. He loves to tattle on others, and the children do not like him. There is a dishonest quality about him which he attempts to avoid by use of tall tales, etc. He knows some whoppers. He is or could be an above average student if properly directed.

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BIOGRAPHICAL SKETCH

William R. Lindsay was born in Chicago, Illinois, on May 23, 1931. He lived in Elmhurst, a suburb of Chicago, and attended Elmhurst College, receiving his Bachelor of Arts degree in 1954.

After teaching junior high school for three years in the Chicago area, he accepted a position with the Defense Department's Overseas School System and taught a year in France, a year in Italy, five years in Spain, and two years in Turkey. These years were highlighted by participation in curricular innovation, leadership in teachers' organizations, and administrative responsibility.

In 1966, he was awarded a National Science Foundation Academic Year Institute at the University of Florida. In August, 1967, he received the degree of Master of Education and began a program leading to the doctorate. During these years he served as a third-time assistant in elementary education and a half-time assistant for research and evaluation for a local ESEA Title III project.

He is married to Lucille Nelson Lindsay from Sparks, Nevada, who shares his interest in music, sports, and travel as well as his profession.

This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Education and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Education.

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